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EMERYVILLE GENERAL PLAN

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SEDWAY COOKE ASSOCIATES

EMERYVILLE
GENERAL PLAN

EMERYVILLE GENERAL PLAN

Approved by Planning Commission, May 14, 1967

Adopted by City Council, June 2, 1967

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The following individuals have contributed greatly to the preparation of the Emeryville General Plan.

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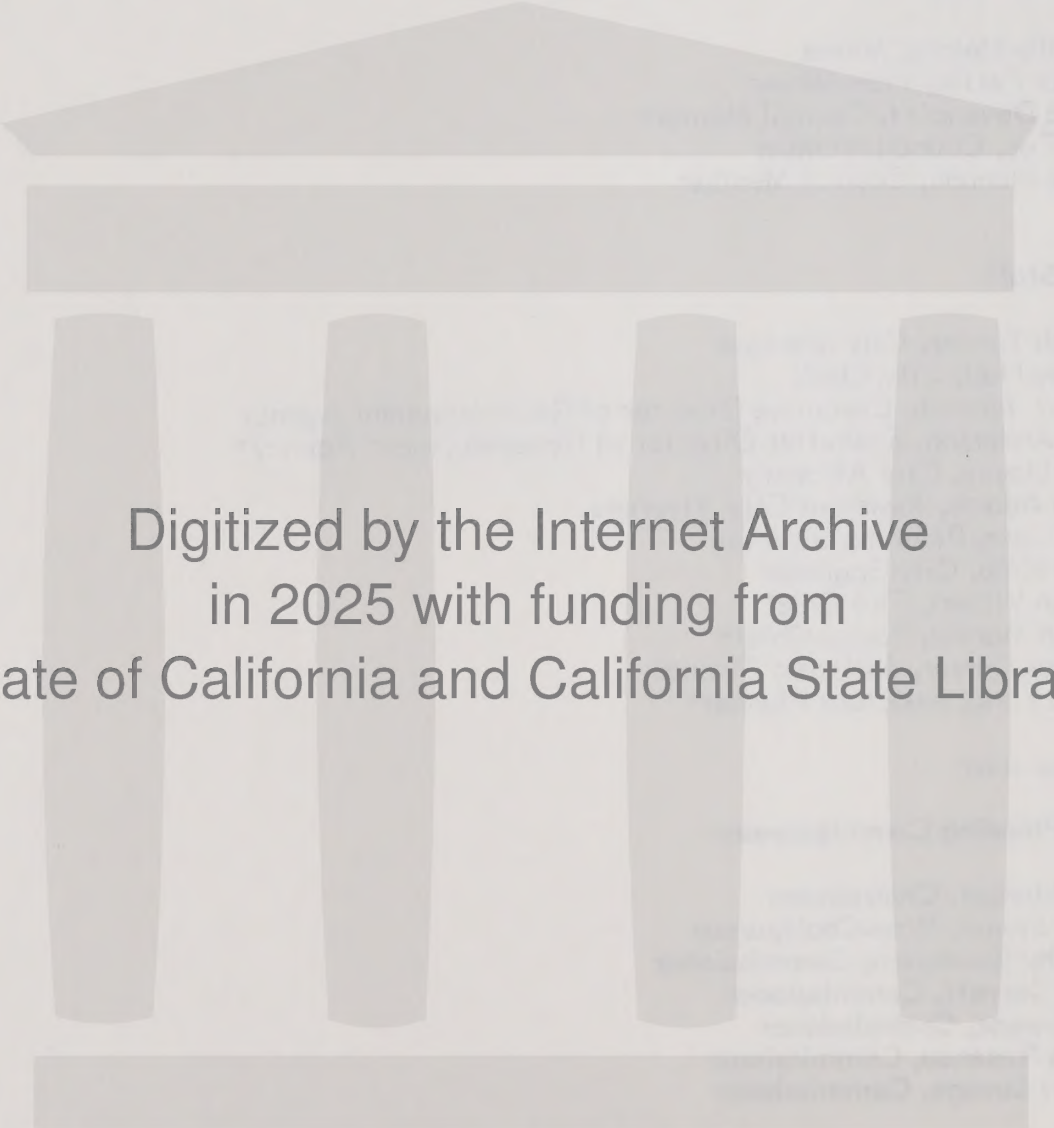
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CHAPTER I: INTRODUCTION

A. PURPOSE OF A GENERAL PLAN

A general plan is a long-range statement of public policy primarily for the use of private and public land within a community's boundaries. As indicated by its name, a general plan is not a detailed, parcel-specific policy statement. Instead, it establishes a generalized pattern of future land use and transportation and provides guidance on how to achieve the desired development pattern.

The general plan reflects the aspirations and values of Emeryville residents and is adopted by their elected representatives. It is a mechanism by which a community may articulate its values, determine their relative importance, and assess their comparative long-term implications. There are no "correct," "right," or "ideal" general plans, but only plans which more or less reflect a particular set of values.

State planning law provides a detailed procedure for the adoption of general plans, the intent of which is to allow individuals opportunities to be heard in an attempt to persuade others to accept or acknowledge their values. In exchange for these opportunities, all participants share in the responsibility to accept and support the policies which are incorporated in the adopted plan. Once adopted, these policies become the basis for day-to-day decisions by elected and appointed officials. By this means, the values reflected in the general plan policies shape and form the community and quality of life sought by its residents.

As a consequence, a general plan will not always reflect the existing land use pattern. Its function should not be confused with that of an existing land use map, which is a parcel-specific documentation of land uses as they exist. In contrast, a general plan may ignore individual, small-scale differences in land use and present a generalized picture which represents the dominant land use character of an area. In other instances, the plan may show the transition of an existing land use to a new, different land use. Finally, the general plan attempts to show land use over a relatively long time period.

B. CONTENTS OF THE PLAN

Although general plans are often thought of as primarily concerned with land use decisions, land use is intimately related to other subjects which must also be considered in the planning process and the general plan. State planning law (Government Code Sections 65302-65303) requires policies dealing with land use, circulation, housing, open space, conservation, safety, and noise. In addition, general plans may contain other optional elements if the community so chooses. Plans must cover all territory within the boundaries of the adopting city or county. For Emeryville, the planning area includes all incorporated territory, both public and private, within the city limits shown in Figure I-1. Because planning issues may extend beyond political boundaries, State Planning Law allows a local government to indicate its concern for the future of the lands under its neighbor's jurisdiction. Thus, in some instances, particularly as they relate to transportation, Emeryville's General Plan makes proposals for development/improvements in Oakland and Berkeley.

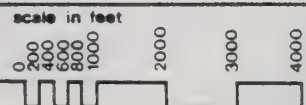


**Figure I-1
GENERAL PLAN AREA**

EMERYVILLE GENERAL PLAN

SEDWAY COOKE ASSOCIATES

Urban and Environmental Planners and Designers



Emeryville's General Plan is organized into three parts: Introduction, Framework for Planning, and The General Plan Elements. This introduction provides an overview to the use of the General Plan. The next part identifies the community's aspirations, expressed as broad goals, and presents the key concepts from which the Plan's policies and proposals evolved. The Plan elements in the third part set forth recommendations for accomplishing the goals.

C. USE OF THE PLAN

Key Terms

The General Plan consists of text and maps. Certain key terms are used repeatedly throughout the text, and their understanding is required in order to use the Plan. These key terms are described below.

A **goal** is a broad, generalized expression of commonly held community values. Since a goal is broadly stated, disagreement regarding it tends to be uncommon. **Objectives** are similar to goals, and frequently the two terms are used interchangeably. As used in the General Plan, an objective is a more narrowly drawn and concrete expression of community intent. One goal may imply two or more objectives, each responsive to a particular aspect of the more broadly stated goal. For example, a community goal might be "protection of natural resources." A related objective could be "encourage more efficient use of energy." Other objectives related to this goal might address air quality, water quality, wildlife habitat, etc.

A **policy** is a fairly precise statement of how public regulatory powers and fiscal resources will be exercised and allocated over time to achieve a specific objective. Policies may be expressed in text as guidelines or standards, maps, diagrams, or some combination thereof. It is important to note that some policies are more specific than others. Examples of policies relating to the previous examples of a goal and an objective include "land use patterns which can be easily served by public transit should be encouraged" and "the energy efficiency of existing residential structures should be increased through public education and financial assistance to low- and moderate-income families."

The policies contained in the Plan are expressed in terms of "**shall**" or "**should**." There is an important distinction between these two terms. As used in the Plan, "shall" indicates an unequivocal commitment, while "should" indicates a slightly less rigorous commitment to be followed in the absence of compelling, countervailing factors specified in the General Plan.

The final link in the chain running from an objective to its physical realization is provided by **implementation**. Implementation programs and measures are concerned with the specific actions necessary to execute or carry out policy. Examples of implementation programs include revision of sign ordinances, development of a capital improvements program, or allocation of budget to rehabilitate housing.

Time Frame and Plan Revisions

Traditionally, general plans projected an ultimate land use pattern and established a date for its achievement. These "end-state" general plans presented many problems, the most significant of which were unresponsiveness to changing conditions and the difficulty of implementing an end-state land use pattern which provided little or no guidance concerning the day-to-day phasing of development.

End-state plans have largely been replaced by plans using time frames of 10, 15, or 20 years. The Emeryville General Plan reflects a 20-year time horizon. To provide for flexibility and responsiveness to change, the Plan also requires a comprehensive review and revision, if appropriate, at 5-year intervals; except the housing element which by law must be revised not less than every five years. This periodic update will allow the Plan to always maintain at least a long-range 15- to 20-year perspective.

The periodic review of the Plan does not require a total overhaul. Once adopted, the Emeryville General Plan establishes a basic policy framework which must be followed over time. The purpose of reviewing the Plan every five years is to allow it to adjust in response to: changing conditions, both internal and external to the City; the availability of more recent planning data; and shifts in community values. Only under the most extraordinary circumstances, such as a major local disaster, a national emergency, or the complete failure over a long span of time to periodically review the Plan, would a thorough and total overhaul be necessary.

If appropriate, the City may amend all or part of its adopted general plan. Mandatory elements may be amended up to four times in any calendar year, unless special conditions apply as defined by Government Code Sections 65358(c) and (d).

Plan Maps and Their Interpretation

In addition to text, the General Plan contains two types of maps: official and illustrative. Official maps show the geographic application of General Plan policies, while illustrative maps are merely visual aids for the reader. Only official maps shall be consulted to determine how Plan policies apply to geographic areas within Emeryville. These maps include the Circulation Plan (Figures III-7 and III-8), the Open Space and Recreation Plan (Figure III-10), the Land Use Plan (Figure III-14), Building Intensity (Figure III-15), Building Form (Figure III-18), Cityscape (Figure III-19), Emeryville Activity Centers (Figure III-20), and Landscape Corridors (Figure III-24). All other maps and diagrams should be considered illustrative.

Before a General Plan official map shall be given direct regulatory effect, it must be translated into a more precise map, usually a zoning ordinance map, with legally definable boundaries. The principal rule to be followed is one of common sense. Taking a comprehensive view of all relevant Plan policies, the result must further the intent of these policies in a practical, workable, and sound manner.

At times, it may be necessary to review data maps which were used to prepare official maps in order to determine how a Plan map expresses the relevant policies. Usually, the data maps are at the same scale as the Plan maps, and they can provide useful insights into the policy rationale for the boundary lines delineated on the Plan map. Inspection of the Plan map should clarify whether Plan designations appear to follow physical boundaries, either natural or man-made, and non-physical, man-made

boundaries, e.g., section lines, city limits. No attempt should be made to measure distances of areas on the Plan map.

Once a definable and legally describable boundary has been preliminarily established, it should be compared with any other non-physical boundaries in the vicinity, such as property ownership lines, political entity boundaries, section lines, etc. Applying the common sense rule, impractical or unusual preliminary boundaries should be revised, provided this is consistent with Plan policies.

Use of the Plan by Officials and Citizens

The General Plan is designed to be used by elected and appointed City officials on a daily basis in making decisions with direct or indirect land use implications. It is also to be used by officials and staff of other government agencies--federal, state, and local--and to provide a framework for interjurisdictional coordination of planning efforts. The Plan is designed for frequent consultation, and failure to use the Plan will quickly cause it to become out-of-date and irrelevant.

City residents and property owners are expected to be major users of the Plan. Members of these groups may choose to use the Plan as it regards a particular geographic area or as it addresses a particular subject of interest to them. In either instance, the Plan must be used comprehensively, and Plan objectives and policies must be viewed in the context provided by all other relevant objectives and policies. To assist the reader in taking this comprehensive approach, the Plan elements are cross-referenced to each other, and each element group contains an introduction explaining the relationship of its elements to those of the other groups.

D. THE PLAN AND THE REGULATORY SYSTEM

California law provides local governments with a variety of regulatory mechanisms and administrative procedures for implementing general plans. These implementation tools must be based on policies contained in the plan. Provisions of state planning law requiring consistency between the general plan and its implementation programs are briefly described below.

Zoning Regulations

The General Plan should not be confused with the zoning ordinance map. A zoning ordinance map is a parcel-specific statement of how lands may be used in the present and near future. As a legal instrument, the zoning map has immediate force and effect. In contrast, a general plan contains a generalized statement of land use. It does not have direct and immediate effect on land use. The function of a general plan is to provide a policy framework that must be reflected in the zoning ordinance and specific plans, which are key mechanisms for implementing these policies. Because the Plan map is general, it will not show the location of small-scale land uses, such as neighborhood commercial centers. The Plan contains policies governing the location of such small-scale uses, and it will be necessary to exercise judgment in interpreting these policies. Since it is a long-term statement of land use policy, it is possible that the ultimate use of a particular land area, as shown in the Plan, may

differ from the existing use currently permitted by the zoning ordinance map. As prescribed by phasing mechanisms contained in the Plan, the zoning ordinance must be revised at the appropriate times to reflect the long-range land use policies in the Plan.

Section 65860 of the California Government Code¹ requires that the City's zoning ordinance be consistent with its General Plan. Consistency may be achieved only if the City has adopted a general plan and the various land uses authorized by the zoning ordinance are compatible with the objectives, policies, general land uses, and programs specified in such a plan. This section also requires that when the general plan is amended, the zoning ordinance must likewise be amended as is necessary to maintain consistency with the plan.

Section 65566 requires that any zoning action by the City which affects the use of open space land or any interest in such land must be consistent with the City's open space plan. Closely related is Section 65567, which requires that the City's open space zoning ordinance, the adoption of which is mandated by Section 65910, also be consistent with the open space plan.

Section 65853 requires that the Planning Commission provide the City Council with a written recommendation on a proposed zoning ordinance and all amendments of an existing ordinance. As required by Section 65855, this recommendation must include discussion of the relationship of the proposed ordinance or amendment to the general plan.

Subdivision Regulations

Section 66473.5 provides that the City shall not approve a proposed subdivision map unless the subdivision, including its design and proposed improvements, is consistent with the General Plan. In a manner similar to zoning regulations, consistency may be found only when the City has adopted a plan and the proposed subdivision is compatible with the objectives, policies, general land uses, and programs specified in the plan. This requirement applies to subdivisions for which parcel, as well as tentative and final maps, are required. Section 66474 states that the City shall deny approval of tentative and final maps if it finds that the proposed map, or the design or improvement of the proposed subdivision shown on the map, is not consistent with the general plan.

Although somewhat confusing as stated in the law, the two above sections also apply to condominiums, community apartment projects, or stock cooperatives which must submit tentative and final maps (see Section 66426). Unless the general plan contains definitions, objectives, and policies specifically directed at the conversion of existing buildings into condominium projects or stock cooperatives, these two sections, 66473.5 and 66474, do not apply to such conversions (see Section 66427.2).

Section 65567 requires that a subdivision map may not be approved unless it is consistent with the open space plan. The City may require the dedication of land, the payment of in-lieu fees, or some combination of the two, for park or recreational purposes as a condition of the approval of a final or parcel map, but only if the

¹ Unless otherwise indicated, all references are to the Government Code.

general plan contains a recreational element and the dedicated facilities conform to definite principles and standards contained in the element (see Section 66477(d)).

Finally, the City may require the reservation of land within a subdivision for parks, recreational facilities, fire stations, libraries, or other public uses, provided such requirements are based on appropriate general plan elements (see Section 66479).

Capital Improvements

Section 65401 authorizes the City Council to require City officials and agencies to prepare and submit lists of all public works projects recommended by them for study or construction during each ensuing year. This requirement also applies to special and school districts whose jurisdictions lie wholly or partially within the City. Upon submittal, such lists must be integrated by the City into a coordinated program which must be submitted to the Planning Commission for review as to its conformity with the General Plan.

Section 65402 requires the Planning Commission to review the conformity of the following actions with applicable elements of the General Plan:

- acquisition of lands for public purposes
- disposition of lands
- street vacations
- authorization or construction of public buildings or structures.

Environmental Impact Procedures

An environmental impact report (EIR) must be prepared for the General Plan in order to determine if the Plan policies and recommendations could result in significant effects to the environment. Because the contents and discussion in a general plan largely overlap the contents and discussion in an EIR, State law permits communities to combine them as a single document. For projects proposed within the Plan's jurisdiction, Section 15080 of the California Environmental Quality Act (CEQA) Guidelines requires that an initial study of the project consider whether the project is compatible with the General Plan. Section 15125(b) of the Guidelines requires an EIR to discuss any inconsistencies between a proposed project and the General Plan. Appendix G(a) of the Guidelines states that a project will normally be found to have a significant effect on the environment if it will conflict "with adopted environmental plans and goals of the community where it is located."

Building and Housing Codes

Section 65567 provides that building permits must be consistent with the open space plan. The State Housing Law (Health and Safety Code Sections 17910, et seq.) requires the City to adopt regulations imposing substantially the same standards as those contained in various uniform industry codes. This law also imposes special standards, which may be more burdensome than the uniform industry codes, designed to protect against certain types of hazards (fire, noise, earthquakes, unstable soils) and to achieve certain resource goals (energy conservation). Emeryville may adopt regulations and standards at variance from those mandated by the State Housing Law if justified by local conditions. Although not explicitly required by the State Housing

Law, the General Plan is an especially appropriate vehicle for documenting such local conditions and specifying the necessary regulatory response in order to justify variances from State law.

Redevelopment Plans

Redevelopment plans provide local communities with a powerful tool to stimulate public and private improvements in deteriorating areas. The plan must discuss streets, buildings, and open space; contain a description of financing methods; and provide for participation by affected property owners. The Health and Safety Code (HSC) Sections 33302 and 33331 require the Planning Commission to review the redevelopment plan before action by the City Council and prior to adoption, the City must have adopted a General Plan and found that the redevelopment plan is in conformance with the General Plan.

Other Consistency Requirements

Listed below in capsule form are other consistency requirements contained in State law which at some future date may apply to Emeryville:

- HSC Section 34326 concerns consistency between housing projects undertaken by housing authorities and the general plan;
- HSC Section 34711 concerns consistency between housing programs for developmentally disabled, mentally disordered, and physically disabled and the housing element of the general plan; and
- Streets and Highway Code Section 32503 concerns consistency between the planning and locating of parking facilities undertaken by parking authorities and the general plan.

CHAPTER II: FRAMEWORK FOR PLANNING

A. BALANCING REGIONAL OPPORTUNITIES AND LOCAL NEEDS

Emeryville is located in the heart of the San Francisco Bay Region, as shown in Figure II-1. Interstate 80 runs north-south through the City, connecting it with the northern portion of the East Bay and San Francisco. State Route 17 and Interstate 580 link the City with the southern portion of the East Bay, Santa Clara County, and the Livermore Valley. Emeryville is integrally related to the region's economy, visual image, and open space system. With Oakland, Berkeley, and Albany, the City shares a magnificent and environmentally sensitive shoreline. Within this context, Emeryville has the opportunity to play a major role in the shape of the Bay Region.

At the same time, Emeryville now has the intimacy of a small town. Its present size and population are typical of what might be characterized as a neighborhood in larger cities. The General Plan can be used to help existing residents and employees, those who have already invested time and energy in the City's improvement, continue to have a place where they can live, work, and enjoy recreation activities.

The City's General Plan is a program for balancing these opportunities. If land use issues are carefully examined in terms of the City's overall economic, cultural, and social fabric, the result can be a conscious blend of regional and local interests.

B. CITYWIDE GOALS

Through a series of community workshops, conducted during preparation of the Plan, the following goals have been identified by the citizens as their fundamental aspirations for Emeryville's development:

- Goal 1: Establish and maintain efficient and harmonious use of land within the community, accommodating both residential and business interests, and minimizing potential threats to public health, safety, and comfort.
- Goal 2: Develop and maintain an efficient circulation system to accommodate the movement of persons and goods to, through, and from Emeryville, including rail, vehicular, and pedestrian movement.
- Goal 3: Improve the cohesiveness and image of the City through the careful design and coordination of new development with existing development and through the rehabilitation and redevelopment of older areas.
- Goal 4: Achieve utilization of the land supply that maintains a solid tax base while respecting the area's natural, scenic, and historic resources.
- Goal 5: Develop and maintain a high standard of design and use for services and facilities that meet the community's needs for education, cultural entertainment, and protection of public health and safety.

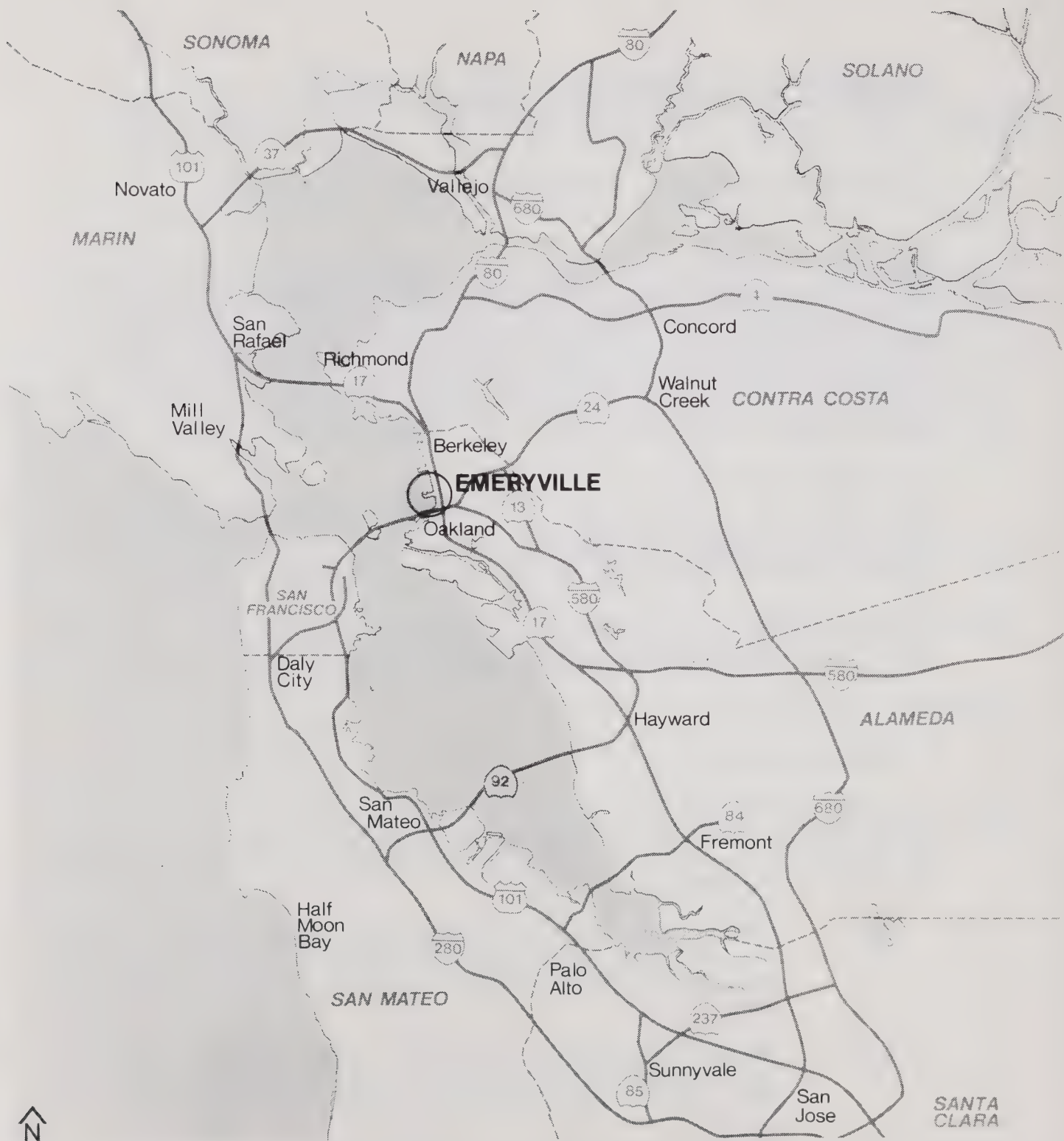


Figure II-1
REGIONAL LOCATION

EMERYVILLE GENERAL PLAN

SEDWAY COOKE ASSOCIATES

Urban and Environmental Planners and Designers

C. PLAN FORMAT

State planning law gives communities discretion on how their general plans can be organized. It also provides that the degree of specificity and level of detail in the plan reflect local conditions. Three interlocking components have been defined to establish Emeryville's framework for planning. They are shown in Figure II-2 and are as follows:

Community Development. This component encompasses those aspects of Emeryville that define its built environment; e.g., its housing stock, businesses, roads, public facilities, etc.

Environmental Resources. This component encompasses those aspects of Emeryville that comprise its natural environment; e.g., its waterfront, open space and other natural resources, climate, etc.

Public Health and Safety. This component encompasses those aspects of Emeryville that affect the general health, safety, and welfare of the public and of property.

The order in which these components are presented in the Plan does not reflect their priority, but rather a logical sequence of information presentation and policy formulation. The presentation of state mandated issues may be covered by several elements in the Emeryville General Plan. For example, the State requirements for an open space element are spread over six different elements in the Plan.

For each of the elements identified in Figure II-2, the text follows a similar organization. The first part describes the existing conditions related to the element. This description summarizes major opportunities and constraints to the City's orderly physical development. With this first section as a background, the second section offers recommendations in the form of objectives and policies. The recommendations seek to remove the constraints and take advantage of the opportunities that will enable Emeryville to achieve the goals set forth in Chapter II. Finally, each element contains an implementation section that describes specific regulatory, advisory, or financial means of carrying out the objectives and policies. Each implementation proposal begins with a specific action item and identifies which agency or group should have primary responsibility. The text following the action item is explanatory and is offered to provide citizens and public officials with a better understanding of how the action item works or how it could be implemented.

D. PLAN CONCEPTS

The key concepts that will serve to organize the City and establish a framework for redevelopment and new development are shown in Figures II-3 through II-6. These concepts must be viewed in combination because the City is a dynamic organism. Its parts must work together in order for it to thrive. A proposal for a street must make sense for the entire City, not just a portion of it. A proposal for a land use must make sense in terms of the site, as well as for the roads that serve it and for the

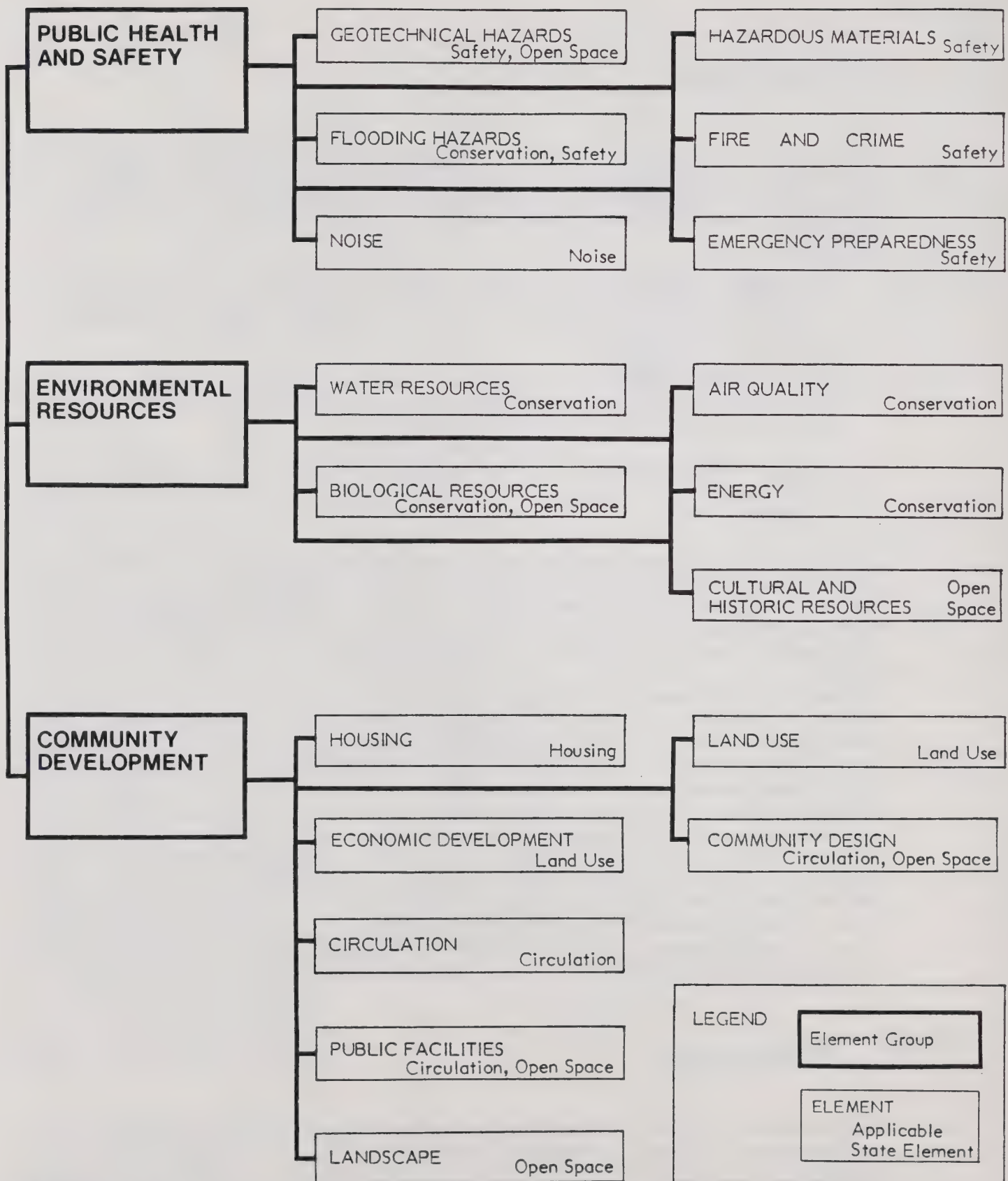


Figure II-2
EMERYVILLE GENERAL PLAN ELEMENTS

EMERYVILLE GENERAL PLAN

surrounding uses. A proposal for a pedestrian corridor must be conscious of the open space systems, the vehicular traffic and pattern, and the location of desirable destinations. While there is a tendency to look at each of these proposals independently, the Plan seeks to have readers look at them interdependently.

Land Use

In general, a city's land use pattern determines where people live, conduct business, play, and interact. The location and mixture of these various activities in Emeryville can contribute to a cohesive, dynamic community, or can result in isolated enclaves thwarting efforts to develop civic pride. In residential areas, the land use pattern should provide convenient shopping and social opportunities, discourage heavy vehicular traffic, and create an environment where residents feel safe and comfortable. In business areas, the land use pattern should offer convenient eating, shopping, parking, and support services, and permit higher development intensities along transit corridors and where regional accessibility is good. In some locations, a key to encouraging vitality and livability is to permit the mixing of residential, business, and recreational activities. Residents of these "mixed use" areas begin to see their environs as a place of day-long activities rather than a "9-5" work location or a place to sleep.

Distribution of Land Use. The application of these principles to Emeryville is shown in Figure II-3, which illustrates a generalized land use concept. One of the basic thrusts of the concept is to permit Emeryville to take advantage of its central location in the region. From a regional perspective, it would be desirable to accommodate more intensive development in "city center" locations rather than allowing it to disperse where such development may encourage longer commutes and consume open space. A second basic thrust is to control the amount of region-oriented development and to enhance Emeryville as an identifiable community. This means that the City's more intensive and regional development should be confined to the waterfront along Interstate 80. East Emeryville should be the heart of the community.

Peninsula. In this area, the land use pattern is already basically established. The primary land use objective for this area is to enhance public access to the waterfront and to create an enjoyable visual and recreational experience once people arrive in the area.

Bayfront. In the Bayfront area, a whole new mix of land uses is being promoted to replace the older industrial, wholesale, and trucking operations that have begun to leave the City. The proposed land uses are intended to expand the City's housing areas, to provide for offices that can take advantage of the City's central, regional location, and to provide for a variety of retail and service activities that will encourage Emeryville residents and workers to come to the area. These more intensive, region-serving activities should be concentrated closer to the regional circulation system.

East Emeryville. Several objectives were considered in developing the land use diagram for East Emeryville. First, the existing residential areas in the Triangle and in the North End must be preserved; that is, disruptive factors like heavy traffic should be eliminated and positive factors like good housing should be maintained. One obstacle to unifying the community is that the residential neighborhoods are physically separated from one another and from the residences in the Bayfront and Peninsula. Thus, it is recommended that new housing areas should be encouraged

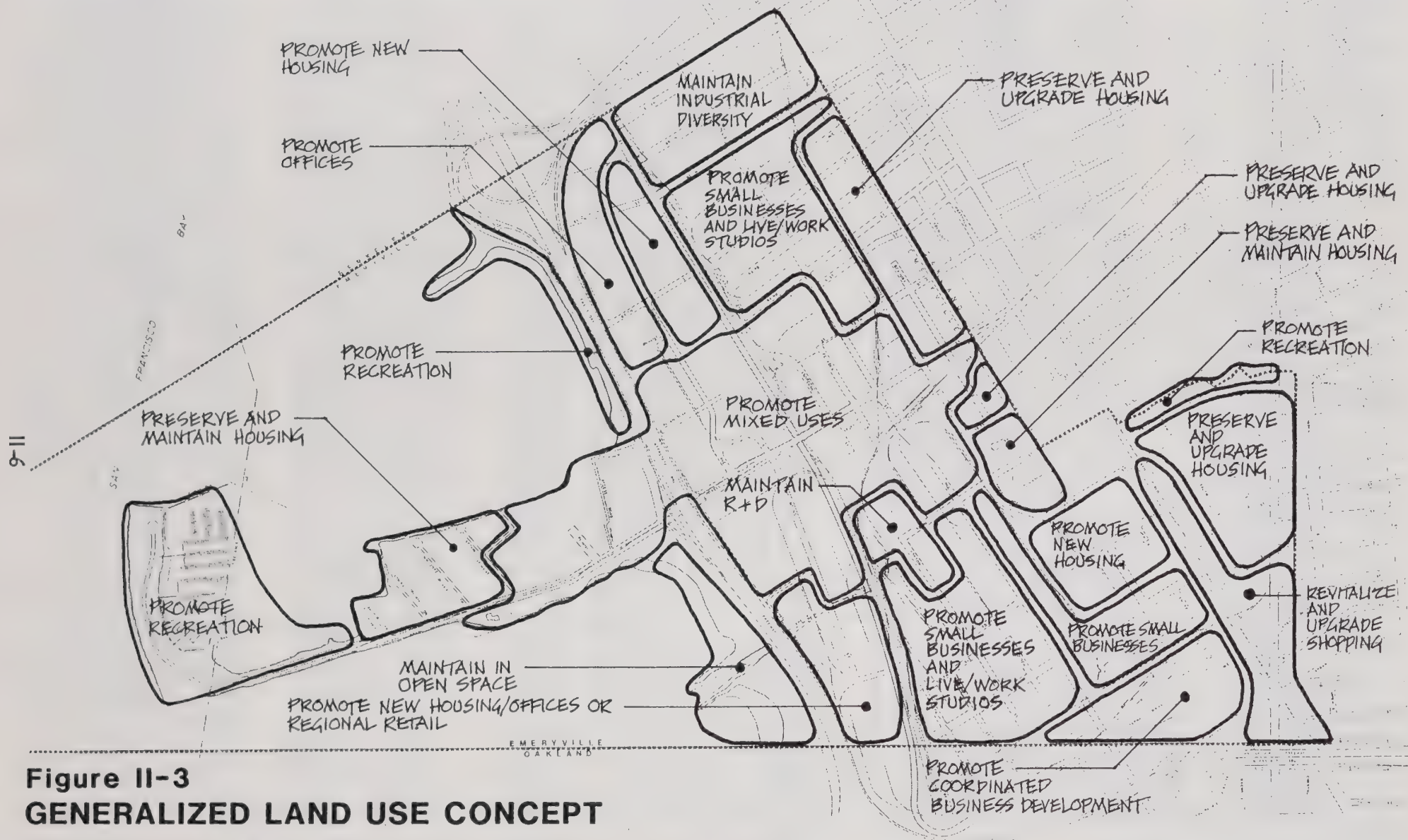


Figure II-3
GENERALIZED LAND USE CONCEPT

EMERYVILLE GENERAL PLAN



where feasible to stimulate the local economy, to bridge the existing residential neighborhoods, and to provide opportunities for employees of the nonresidential development to live in Emeryville.

Second, the artist communities and small business concerns are valuable contributors to Emeryville's cultural and economic livelihood. Accordingly, areas where they already exist and where they should be promoted need to be defined and protected. Third, the area along Powell and Stanford represents the central east-west spine of the City, a place where a variety of activities can be encouraged, a place where people can come to enjoy themselves. Given its central location within the City, it is recommended that this area be developed with housing, shops, artists' studios, offices, entertainment, etc. -- a true mixed use area.

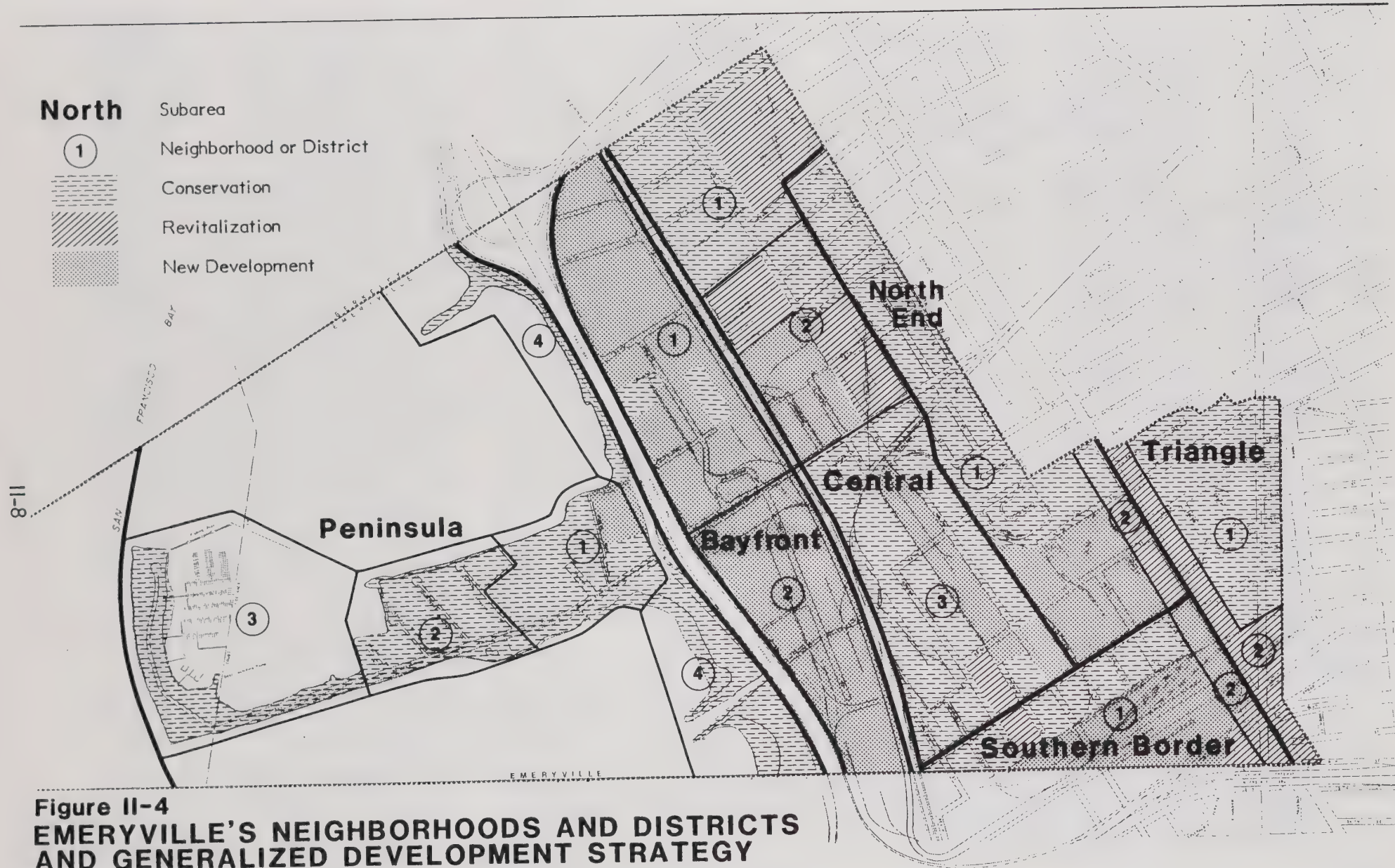
At the south end of the City, just east of the main Southern Pacific railroad tracks, lands that are currently underutilized, owned by utilities, or in marginal use for rail operations represent an important resource. Here, the objective was to allow a diverse range of light manufacturing and wholesale activities, reflecting recent trends to develop the area for research and development activities, furniture assembly, and wholesale showrooms. Finally, the area along Yerba Buena offers a unique opportunity to integrate, coordinate, and plan the entire area since it is under single ownership. Close cooperation with Oakland will be needed to ensure that this area achieves its potential.

Compatibility of Uses. "Transitional" or "buffer" uses need to be introduced in areas where adjacent uses are presently incompatible. For example, the location of a residence next to an intensive industrial facility is undesirable because the operation of the industrial facility diminishes significantly the quality life for the resident. The idea is to introduce a use that is more compatible with each and can help separate the two incompatible uses. Light industrial, commercial, and artist live/work space are examples of uses that offer such an opportunity.

In addition, selecting appropriate development intensities can serve to attract greater public/private interaction where desired, protect single family areas and small-scale businesses, stimulate investment in underutilized areas, and minimize conflict in areas of incompatible activities. The idea of tailoring particular strategies to areas within the City is presented in the next section.

Development Strategies. Although Emeryville is a small community, it is complex because of its diversity. Within the broader subareas -- Peninsula, Bayfront, and East Emeryville -- there are a number of smaller "districts and neighborhoods" that can be identified on the basis of related land uses, physical boundaries such as streets or railroad tracks, or community facilities. In some cases, the identity/cohesiveness of the district or neighborhood is weak, as in the entire Bayfront. In other cases, the identity/cohesiveness is quite strong, as in the residential portions of the Triangle. Because each district and neighborhood has different characteristics and needs, appropriate development strategies must be fashioned for each. The strategy generally targets the desired type of development, the relationship of the new development to the existing structures, and the intensity of that development.

Figure II-4 shows the boundaries for the various subareas, and Table II-1 identifies the desired characteristics for each. The density proposals in Table II-1 merely provide an indication of the development intensity for subareas of Emeryville relative to one another. The categories do not imply anything regarding the appearance



EMERYVILLE GENERAL PLAN

SEDWAY COOKE ASSOCIATES

Urban and Environmental Planners and Designers

scale in feet 0 200 400 600 800 1000

2000



TABLE II-1: LAND USE DEVELOPMENT STRATEGY

<u>District</u>	<u>Predominant Land Use</u>	<u>Development Strategy</u>	<u>Density</u>
Triangle	1. Housing	Conservation; small scale infill	low
	2. Commercial	Revitalization; small scale infill	mid
Southern Border	1. Light industry	● Conservation at northern end; medium scale infill ● New development at southern end; medium scale	mid
	2. Commercial	● Revitalization; small scale infill	mid
North End	1. Housing	● Conservation north of 47th Street; small scale infill ● New development south of 47th Street; medium scale	low mid
	2. Commercial	Revitalization; small scale infill	mid
Central	1. Industry	Conservation/revitalization; medium scale infill	low
	2. Mixed use, small businesses	Revitalization/new development; medium scale infill and reuse	mid
	3. R&D, open space, small businesses	● Conservation; medium scale infill and reuse ● New development on PG&E; medium scale	mid
Bayfront	1. Mixed use	New development; medium-large scale	mid to high
	2. Mixed use, possible regional retail	New development; medium-large scale	mid to high
Peninsula	1. Mixed use	● Conservation/new development; large-scale infill ● Public uses along southern shoreline	high
	2. Housing	Conservation; medium scale infill	mid
	3. Marina	Conservation; small scale infill	low
	4. Open Space	Conservation	--

or height of structures that would be built in these areas. In general the high density areas are located along Interstate 80, and densities diminish as one moves further east. The notion of "scale" in Table II-1 refers to height and bulk, or the physical size of development. The scale proposals, like the density proposals, are made to differentiate generally one neighborhood or district from another. More specific guidelines for density and scale are presented in the Land Use and Community Design Elements. The following definitions are offered to aid in the understanding of the figure and table.

Conservation. A strategy of conservation suggests that the basic land uses and the majority of buildings should be maintained and protected. New construction should occur primarily as infill of vacant lots, as described below, and the intensity of that construction should be compatible with the surrounding uses. This strategy is recommended for areas like the residential portion of the Triangle.

Revitalization. A strategy of revitalization in an area suggests that many of the buildings require rehabilitation or renovation. Physical improvements can help the image of these areas but they often also must be connected with economic development efforts. Redevelopment, more intensive reuse of existing buildings, and new infill construction would be expected in revitalization areas. A revitalization strategy is appropriate for areas like the San Pablo Avenue commercial strip.

New Development. A strategy of new development suggests there are opportunities to encourage new construction on largely vacant or underutilized land. New construction may replace existing buildings and begin to create a new image for the immediate vicinity, although this image should conform to citywide objectives. These areas often represent opportunities to encourage higher intensity development. This strategy is applicable to the Bayfront and to lands along Yerba Buena Avenue, provided the necessary circulation system is also developed.

Infill. A strategy of infill suggests that new construction on individual, vacant parcels should occur largely in areas surrounded by existing development. The new construction should be harmonious, in terms of use, building type, and scale, with the existing development pattern in the vicinity. This strategy would typically be applied in conservation areas, such as the residential areas in the North End and in the industrial areas in the northern part of City between the Southern Pacific main rail lines and Hollis Street.

Reuse. A strategy of reuse suggests that the existing buildings should be conserved and that new or multifunctional uses should be encouraged within the buildings. This strategy would be most applicable in revitalization areas, and is recommended for areas such as the Westinghouse-ITT Grinnell complex and where artists can adapt buildings to accommodate them.

Circulation

The circulation system deals with how efficiently, safely, and conveniently people move about the City. It includes the street system, sidewalks, bicycle paths, and other travel routes. Aside from determining how well and conveniently people and goods can move about, the circulation system serves to reinforce the land use pattern. In an area of more intensive, large-scale development like the Bayfront, roads must be adequately sized and sufficient access points must be provided to ensure efficient circulation. In residential areas like the North End and the Triangle, the

road system should be of a different character. High-speed, high-volume travel should be discouraged in these areas. It should be clear that such a system is necessary before the land use potential can be realized. Unless improvements to Emeryville's own internal circulation system and to the regional network are made, Emeryville cannot intensify its development pattern without experiencing a serious increase in traffic congestion. Hence, the land use and circulation are mutually dependent on one another.

Internal Circulation. A major constraint to adequately serving travel needs in Emeryville is the current reliance on two streets to handle the bulk of the City's internal traffic. Powell and Hollis Streets are the only main thoroughfares that traverse the length of the City. Consequently, when people need to travel across the City, they funnel onto these roads. Peak hour commute periods are especially frustrating and thus a fundamental concept of the General Plan is to increase the number of travel routes available to people going cross-town (see Figure II-5); for example, Bay Street and the Southern Crossing (connecting Bay Street to Yerba Buena Avenue).

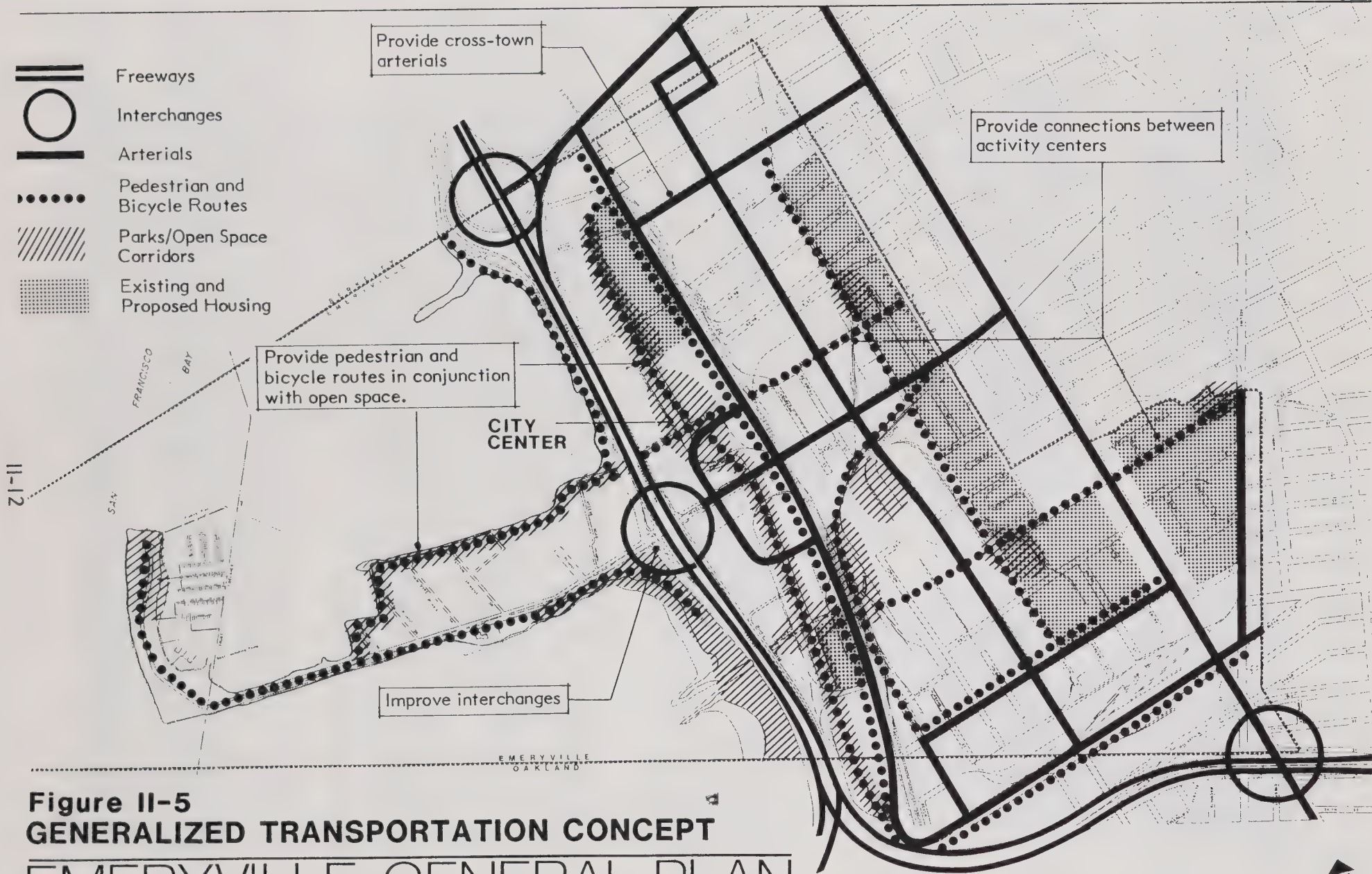
Emeryville, because of its size and central location in the region, has opportunities to provide alternatives to automobile travel which should be recognized and encouraged. However, the mere provision of bicycle paths or pedestrian ways does not ensure their use. The routes must be coordinated with the citywide open space system so that travel along them is enjoyable. Moreover, they must connect places where people want to go: from home to school, school to parks, home to work, etc. A bicycle path that dead-ends without some type of recreation or activity will simply not be used. Thus, a basic concept underlying the designation of non-vehicular travel routes is the interconnection of focal points of activity. Figure II-5 summarizes some of the key principles for creating a more effective non-automobile circulation system.

Regional Access. Emeryville is particularly well-situated within the Bay Region, being convenient to downtown San Francisco and the rapidly growing East Bay. The land use concept seeks to take advantage of this location by encouraging offices, hotels, and regional retail activities along the freeway. To realize this potential, the circulation concept promotes coordination with neighboring communities and the State Department of Transportation to improve Emeryville's freeway interchanges at: Powell Street, Ashby Avenue, and San Pablo Avenue/McArthur Boulevard. Significantly, Emeryville has a tremendous opportunity to foster use of the AC Transit and BART systems. It is highly recommended that the land use pattern and circulation system be developed to encourage and support transit service.

Open Space and Recreation

A present lack of open space and recreational facilities and opportunities was one of the issues most frequently mentioned by Emeryville residents. It is clear that the vitality of residential neighborhoods, and a measure of their "quality of life," is interrelated with the availability of these resources. Consequently, the open space concept is aimed at improving the visual image of areas, defining pedestrian corridors, providing recreational opportunities, and connecting the separate areas of the City in a meaningful way.

The fundamental premise in designing these systems is that they must connect various activity areas: residences, schools, shopping areas, and recreational opportuni



**Figure II-5
GENERALIZED TRANSPORTATION CONCEPT**

EMERYVILLE GENERAL PLAN



ties. Major areas of open space must be accessible to those who would benefit from them. The open space, pedestrian, and bicycle systems are sensitive to the location, type, and intensity of proposed land uses. The systems only make sense if there are sufficient numbers of potential users; otherwise, pedestrian and bicycle systems would be underutilized. Similarly, if the proposed routes traverse uninteresting areas or exhibit hazardous conditions, the systems would again be underutilized.

The proposals illustrated in Figure II-5 link major activities within the City's subareas as well as the subareas themselves. Major improvements call for at-grade rail crossings near 65th Street and adjacent to Temescal Creek. Overpass structures are proposed north of Powell Street over the railroad tracks and over Interstate 80. These connections are recommended because the proposed uses and activities attract people and there is a need for people to reach these places without driving a car. The proposed system ties into the regional open space/recreation network by supporting the East Bay shoreline trail system and by connecting Emeryville with Berkeley's Aquatic Park via Bay Street. Major open space areas where people can gather are proposed near high concentrations of employees or residents, or along natural features such as the Bayfront or Temescal Creek. Other major open space areas are provided where they can help orient motorists and visually organize the surrounding uses, such as along Stanford Avenue and at major intersections.

Urban Design

In addition to organizing the City's development pattern and providing access to homes, businesses, and recreation areas, the Emeryville General Plan strives to enhance the image and quality of Emeryville. This aim is to be accomplished partially by cosmetic means, such as landscape, signage, guidelines for building design, and quality street furniture.

Improvements in the quality of life are achieved also by allowing a mix of uses. The mixed use concept encourages two or three different activities to locate in close proximity, sometimes in the same building. The interrelationships among the uses attract and help sustain vitality. People are in a mixed use area for 24 hours rather than from "9-5" as in a strictly office environment. The generalized land use policy diagram (Figure II-4) illustrates a conscious effort to encourage mixed uses and promote living and working in the same area. The creation of a town center as a focal point for retail, administrative, cultural, and entertainment activities is an example of the effort to create a significant "place" for Emeryville. Other activity centers are illustrated in Figure II-6. The connections among them represent potential bicycle/pedestrian routes. The land use policies describe the type of activity suitable for a particular location and the intensity of development. The urban design concepts, which involve building heights and shapes and their relationships to a building site, give those land uses a physical form and a visual image. In Emeryville, high-rise structures are to be concentrated in the central portion of the Bayfront and Peninsula area. The rest of the City should be maintained at a predominantly low-rise profile to protect views and to complement the small town character desired for East Emeryville.

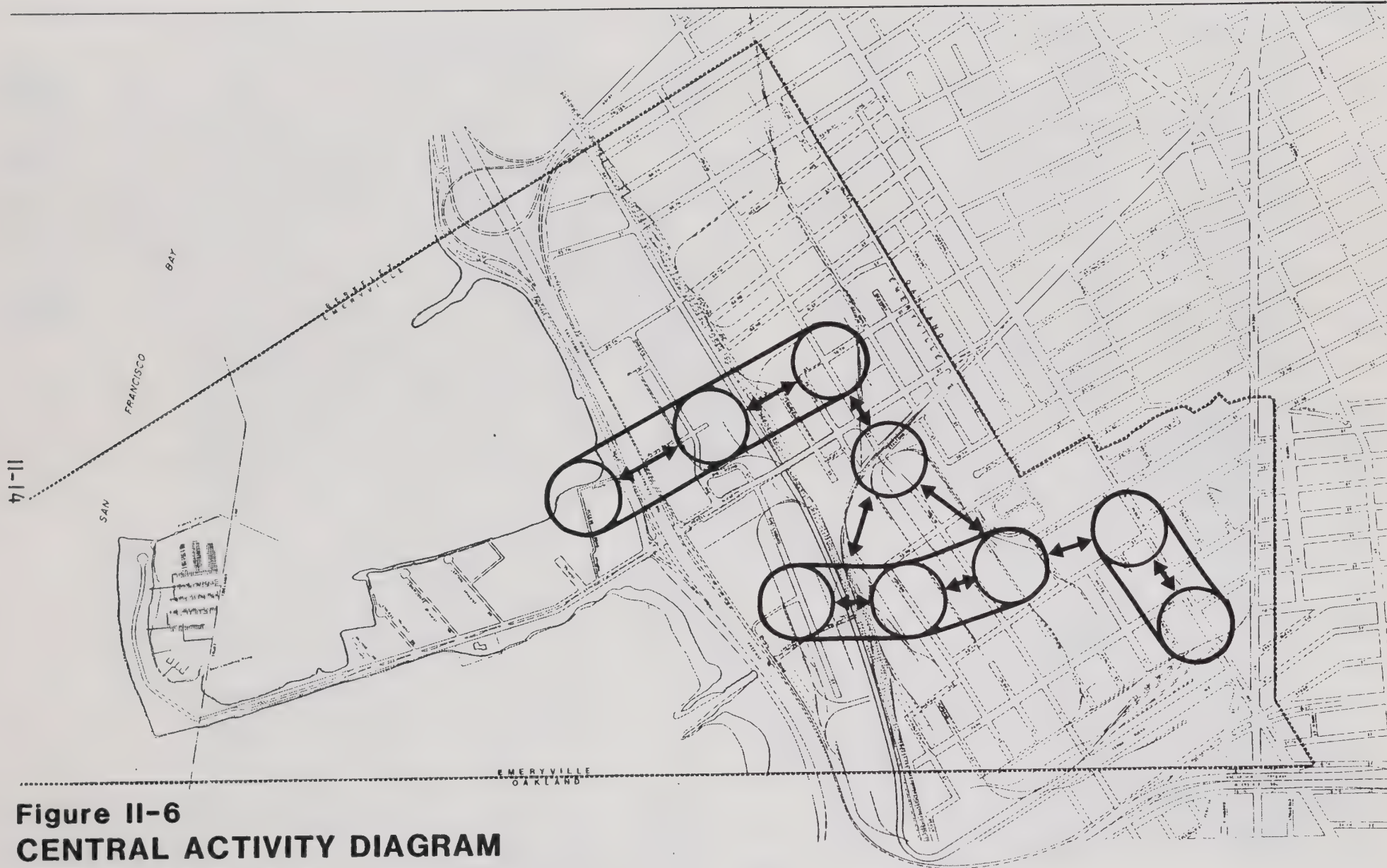


Figure II-6
CENTRAL ACTIVITY DIAGRAM

EMERYVILLE GENERAL PLAN



CHAPTER III: COMMUNITY DEVELOPMENT

A. INTRODUCTION

The Community Development component of the Emeryville General Plan contains provisions that relate to the physical development of the City. More than any other component, this one will establish the image of the City. It serves as the primary vehicle for ensuring the logical organization of residential, commercial, industrial, and public facilities and for encouraging the timely provision of public facilities to meet the needs of the community.

The Community Development component directly responds to the following sections of the State Government Code:

- Section 65302(a) requires preparation of a land use element which designates the proposed general distribution and general location of the uses of land for housing, business, industry, open space, education, public buildings and grounds, and other categories of public and private uses of land.
- Section 65302(b) requires preparation of a circulation element to establish a transportation system that facilitates the efficient transport of goods and the safe movement of all segments of the population.
- Section 65302(c) requires the preparation of a housing element to assure the adequate provision of housing for all segments of the community.
- Section 65303 permits a community to prepare additional elements where in the judgment of the City, additional elements are important. This component contains the following optional elements: economic development, public facilities, community design, and landscape.

B. HOUSING

Introduction

The provision and preservation of decent, affordable housing is clearly recognized as one of the most pressing issues facing the Bay Area. Local governments, businesses, and many special interest groups all have become housing advocates, as the supply of land has diminished and the price of shelter has risen to the point where most households can no longer own a home. Similarly, the growing recognition of how the balance of jobs and housing directly affects commuting patterns and indirectly influences air quality has reinforced efforts to locate housing near existing job concentrations. As a result, the provision of housing demands a regional perspective. At the same time, housing is a very local issue. The preservation of the housing stock contributes tremendously to neighborhood quality, to civic pride, and to the visual identity of the community. In Emeryville, the relatively large numbers of single-person households, of low-income households, and of artists and craftspeople create special housing needs that cannot be overlooked.

This element of the General Plan identifies the City's housing needs, policies, and programs. The California Government Code (Section 60302(c)) requires all cities and counties to prepare a "housing element" as part of the city or county general plan. The housing element assesses the community's housing needs; sets objectives and policies toward the maintenance, improvement, and development of housing; and establishes a five-year schedule of actions as required by Government Code Section 65580-9. Much of the background documentation to support the policies and actions can be found in Appendix A.

The program outlined herein is consistent with state and regional policies to:

- Provide decent housing for all persons regardless of age, race, sex, marital status, source of income, family composition, or other arbitrary factors;
- Provide adequate housing by location, type, price and tenure; and
- Develop a balanced residential environment including access to jobs, community facilities, and services.

Population Characteristics

Population Trends. Emeryville, until recently, has shown little change in its population trends. Only with the recent construction of the Watergate complex in the 1970s and the Pacific Park Plaza condominiums in the 1980s has the population begun to grow. The 1980 Census indicated the City's population was 3,714. The Department of Finance's 1985 estimate of the City's population was 4,860, an annual average growth rate of 6.2% since 1980. By contrast, Alameda County grew an average of 1.3% per year between 1980 and 1985.

Ethnic minorities now represent a larger portion of the City's population than they did in 1970 (46.3% to 42.6%). Blacks continue to represent the largest ethnic minority, although the Asian population has grown considerably since 1970. As a result, Blacks, who constituted 88% of the minorities in 1970, accounted for 62% of the minority population in 1980.

A useful measure of the demographic profile of a community is its dependency ratio. This ratio indicates the proportion of non-working-aged adults and youth (younger than 18 and older than 65) to the working age population. A high ratio suggests a community must devote more of its resources to education and social services. In Emeryville, this ratio has declined from 1970 to 1980, as both the elderly and the school aged population have declined and the working-aged population has grown. In 1970, the "dependent" groups represented over 40% of the total population; in 1980, less than 35%. The new housing built in Emeryville—predominantly oriented toward middle- and upper-income single households or couples—has tended to reinforce this trend.

Future population growth in Emeryville has been projected by the Association of Bay Area Governments (ABAG)¹. The figures shown in Table III-1 and Figure III-1 indicate the City's population will increase to 7,100 by the year 2005. This represents an annual average growth rate of 4.6%, exceeding by far the County's projected growth rate of 1.3%. Table III-1 also shows the dynamics of population growth between census periods. Figure III-2 shows projected household growth. Emeryville's growth is expected to greatly surpass the County's growth rate in each of these periods.

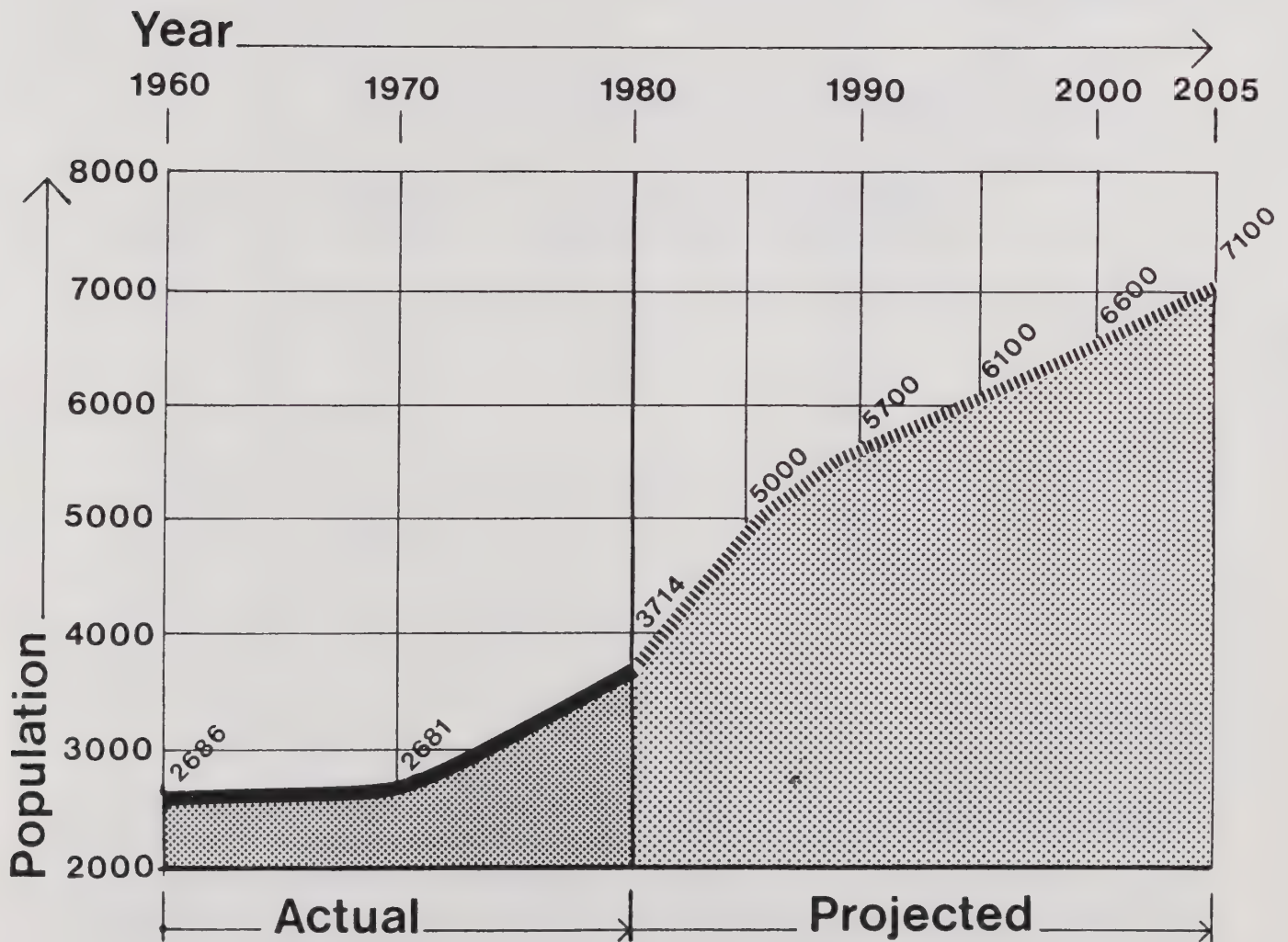
TABLE III-1: EMERYVILLE'S POPULATION GROWTH

	<u>Emeryville's Population</u>	<u>% Change in Emeryville</u>	<u>% Change in County</u>	<u>Emeryville as % of County</u>
1960	2,686	--	--	.30
1970	2,681	0	18	.25
1980	3,714	39	3	.34
1985	4,860	--	--	.42
1990	5,700	53	12	.46
1995	6,100	--	--	.47
2000	6,600	14	10	.49
2005	7,100	--	--	.50

Source: U.S. Census Bureau; Association of Bay Area Governments, Projections - 85, July 1985.

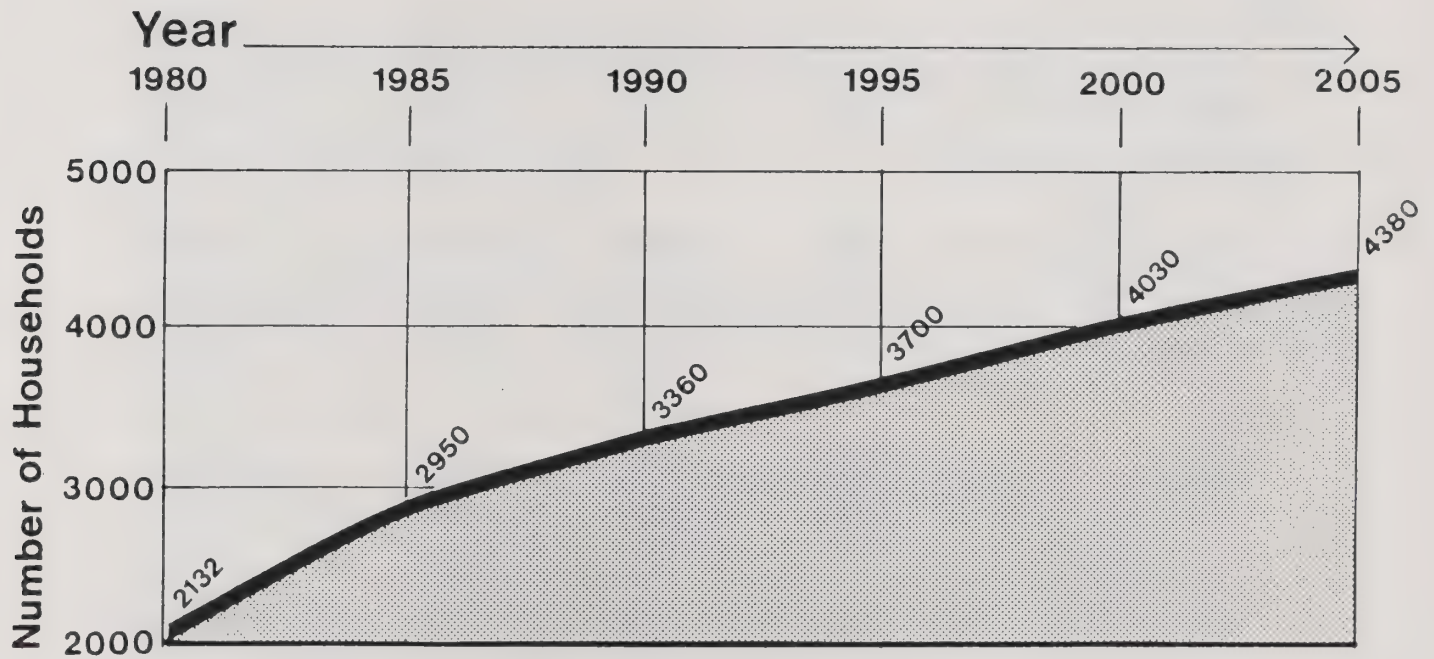
Population Age Distribution. The 1980 census shows major differences in the age characteristics of Emeryville's neighborhoods (see Table III-2). Block Group I roughly approximates the North End, Block Group II covers the Triangle and also includes Emery Bay Village, and Block Group III includes the Bayfront and the Peninsula. Significantly, over 40% of the North End's population were under 18 and less than 1% of the Bayfront's and the Peninsula's population fell into this category. The Triangle contained a majority of the community's elderly population. As a result, the dependency ratios for the North End and the Triangle are high. The Watergate and Pacific

¹ABAG uses a computer model to forecast population, households, employment, and employed residents. Assumptions are made about regional economic and demographic trends as well as local development policies. The assumptions are reviewed with local jurisdictions and modified where appropriate. Regional and County forecasts are allocated to sub-county areas on land supply, development policies, and an optimizing procedure that reflects the supply and demand relationship among different land uses.



SOURCE: Association of Bay Area Governments, Projections - 85, July 1985.

Figure III-1
EMERYVILLE'S POPULATION TREND



SOURCE: Association of Bay Area Governments, Projections - 85, July 1985.

Figure III-2
**PROJECTED HOUSEHOLD GROWTH IN
EMERYVILLE, 1980-2005**

TABLE III-2: SELECTED POPULATION CHARACTERISTICS
BY NEIGHBORHOOD, 1980

<u>Characteristic</u>	<u>North End</u>	<u>Triangle</u>	<u>Bayfront/ Peninsula</u>	<u>City Total</u>
Population	798	1,414	1,502	3,714
Age				
% under 18	41.0%	21.0%	0.4%	17.0%
% over 65	5.1%	13.5%	5.5%	8.5%
Dependency Ratio	0.86	0.53	0.06	0.34
Household Composition				
% of Population				
Over 15 Unmarried	63.6%	63.8%	67.2%	65.3%
% of Population				
in Families	90.2%	68.1%	33.4%	58.7%
Household Size	2.9	2.0	1.3	1.7
Ethnicity				
% White	40.5%	40.6%	84.7%	58.4%
% Black	55.5%	32.7%	9.5%	28.2%
% Other	4.0%	26.7%	5.8%	13.4%

Source: 1980 Census of Population and Housing, Summary Tape File 3A.

Park Plaza projects, which attracted large numbers of working-aged adults, brought about profound social changes to the community, by significantly increasing the population and changing its age structure.

Household Composition. An unusually large proportion of Emeryville's population lives in households of single or unrelated individuals. In 1980, 65.3% of the population 15 years or older were unmarried, of which 32.2% were single, 22.4% divorced, 6.0% widowed, and 4.6% separated. This prevalence of non-family households is common to all of the City block groups (see Table III-2).

The marital status of the population bears a direct relationship to the types of households found in the City. Of the population living in non-family households, nearly four out of every five were one-person households. The large number of unmarried individuals and one-person households account for Emeryville's population per household of 1.71, one of the lowest in the state.

Household type differs sharply among the block groups. Family households represent the living arrangement of 90.2% of the North End's population and 68.8% of the Triangle's population. In contrast, only 33.4% of the Peninsula's and the Bayfront's population was in family households. Consequently, the North End had a higher

number of persons per household than the Triangle or the Peninsula and Bayfront (see Table III-2).

With a 1980 population of 3,714 and 2,132 households, the average household size in the City is among the smallest in the state. In 1970, prior to the construction of the Watergate and Pacific Park Plaza projects, the household size was 2.41, slightly smaller than the County's 2.84. In 1980, the City's average household size had shrunk to 1.74 and the County's was 2.53. In 1985, the Department of Finance estimated the City's household size had declined even further to 1.70 persons. ABAG projects the average household size to level off in the year 2005 at 1.63 persons. The consequence of this demographic trend is a continuing demand for smaller housing units.

Ethnicity. The 1980 Census shows Emeryville to be an ethnically diverse community. Whites comprise 58% of the City; Blacks, 28%; Asians, 8%; and others, 5%. Approximately 9% of the population indicated it was of Spanish origin. The distribution of ethnic backgrounds by block groups shows that ethnic minorities comprise the majority of the population in the community's older neighborhoods in the North End and the Triangle (see Table III-2).

Income. Table III-3 provides a breakdown of median and average income levels for households, families, and unrelated individuals in Emeryville, its three neighborhoods, and Alameda County. The table also presents the number of households falling into the four income groups defined by the U.S. Department of Housing and Urban Development. References in this Plan to lower-income households shall include both the very low and low income groups.

The incomes in the Bayfront and Peninsula tend to be higher than those in the County; whereas in the North End and in the Triangle, they tend to be lower. Households and family incomes in the Triangle are roughly half of the average income in the County. The disparity in incomes among the different neighborhoods parallels the differences in the types of jobs held by the residents. The majority of the employed residents in the older neighborhoods are in technical, manufacturing, and support occupations. In the newer areas, the majority are employed in managerial and professional specialty positions.

Disaggregated by ethnicity, the average income of white families was \$29,576. The average income for black families (\$14,817) was 50.1% of white family income. The average income of Spanish origin families (\$13,457) was 45.5% of white family income.

Special Needs Population

Certain population segments require special attention by virtue of their unique housing requirements. In Emeryville, these include: the elderly, the physically-disabled, female-headed families with children, low- and moderate-income families, and the homeless.

Elderly. In 1980, 8.5% of Emeryville's population was 65 years of age and over. Nearly half of the total elderly population lived alone. Moreover, almost one out of every five elderly persons lived in poverty in 1980. Table III-4 shows the distribution of the total elderly population, the single elderly, and the elderly in poverty among census block groups. About 60% of the City's elderly lived in the Triangle, and of the

TABLE III-3a: INCOME PROFILE BY HOUSEHOLD TYPE, 1980

	<u>North End</u>	<u>Triangle</u>	<u>Bayfront, Peninsula</u>	<u>City Total</u>	<u>Alameda County</u>
Households					
Median	\$16,000	\$10,359	\$22,023	\$17,102	\$18,700
Mean	19,132	12,555	25,533	20,474	21,773
Families					
Median	16,200	11,424	30,000	17,708	22,863
Mean	19,919	13,634	37,061	23,079	25,595
Unrelated Individuals					
Median	7,750	7,759	17,419	15,363	8,119
Mean	11,430	9,957	20,019	16,472	10,351

Source: 1980 Census of Population and Housing

TABLE III-3b: CITYWIDE INCOME PROFILE BY INCOME GROUP, 1980

<u>Income Group</u>	<u>Definition (% of County median household income)</u>	<u>Emeryville Households</u>	
		<u>Number</u>	<u>%</u>
Very Low	0-50	508	23.6
Low	50-80	378	17.9
Moderate	80-120	539	25.0
Above Moderate	120+	723	33.6

TABLE III-4: INCIDENCE OF ELDERLY BY NEIGHBORHOOD, 1980

	<u>North End</u>	<u>Triangle</u>	<u>Bayfront, Peninsula</u>
Distribution among block groups of total elderly population	13.1%	60.8%	26.1%
Elderly population as a percentage of total block group population	5.2%	13.3%	5.5%
Distribution among block groups of total elderly in poverty	0	90.0%	10.0%
Elderly in poverty as a percentage of total block group population in poverty	0	20.3%	7.5%
Distribution among block groups of total single elderly	13.7%	51.0%	35.3%
Single elderly group as a percentage of total single population	20.6%	16.7%	5.7%

Source: 1980 Census of Population and Housing.

TABLE III-5: INCIDENCE OF DISABLED BY NEIGHBORHOOD, 1980

	<u>North End</u>	<u>Triangle</u>	<u>Bayfront, Peninsula</u>
Distribution of total disabled population	36.9%	49.4%	13.7%
Disabled population as a percentage of total block group population	12.4%	7.0%	1.5%

Source: 1980 Census of Population and Housing.

elderly who lived in poverty, 90% could be found in this neighborhood. This segment of the population is especially vulnerable to rising housing costs because they often live on fixed incomes.

The Emeryville Senior Center has helped the elderly throughout the entire City through its elderly and handicapped discount taxi program, hot meal program, and counseling/information and referral services. The discount taxi program provides reduced fares for the elderly and handicapped who are unable to take public transportation. The hot meal program provides hot lunches every weekday to the elderly for a small donation. In addition to these programs, the City funds a service for minor home repairs for lower- and moderate-income homeowners. These programs have provided aid to the elderly, especially to the low-income elderly.

Physically Disabled. Emeryville has a sizable physically disabled population. This group requires housing located convenient to services and special interior design features to increase livability. In 1980, 5.2% of the City's population (over age 15) had a disability which prevented them from using public transportation. Of the disabled population, 60% were elderly citizens. Table III-5 illustrates the majority of the physically disabled population is concentrated in the North End and in the Triangle.

Female-Headed Families with Children. This population segment represents an increasing portion of Emeryville's population. Since many of these families are low-income, it is necessary to have low-cost family housing with a sufficient number of bedrooms to be comfortable. In 1970, 20.7% of the families with children were headed by a single female. In 1980, that number had grown to 53.2% of all families with children. Black female-headed families with children amounted to 75.4% of all female-headed families with children.

In 1980, 29.5% of all female-headed families with children lived in poverty. Of all families with children in poverty, 94.7% were headed by single-parent females. According to the 1980 Census, about half of the female-headed families with children were in the North End and the other half were in the Triangle.

Lower-Income Families. In 1980, 51.6% of Emeryville's families earned income less than 80% of the County's median family income. A recent effort to provide affordable housing for this segment of the community is Emery Glen, a 36-unit housing project for low-income families.

Moderate-Income Families. In 1980, 23.6% of Emeryville's families earned incomes between 80% and 120% of the countywide median family income. Providing affordable housing and opportunities for first-time home ownership is a primary concern for this segment of the population. The Emery Bay Village condominium development, constructed in 1980, has provided moderate-income families with new and affordable housing and an opportunity for first-time ownership. The City's purchase of the site and provision of financial backing for the development made it affordable to moderate-income families.

Table III-6 provides the distribution of the total low- and moderate-income family population among census block groups.

Homeless. With rising housing costs and reductions in social services, the issue of homelessness has become a serious problem in the Bay Area. Individuals without

TABLE III-6: INCIDENCE OF LOW- AND MODERATE-INCOME FAMILIES BY NEIGHBORHOOD, 1980

	<u>North End</u>	<u>Triangle</u>	<u>Bayfront, Peninsula</u>
Distribution among block groups of low-income families	31%	57%	11%
Low-income families as a percentage of all families in block group	61%	73%	18%
Distribution among block groups of moderate-income families	29%	36%	35%
Moderate-income families as a percentage of all families in block group	26%	21%	25%

Source: 1980 Census of Population by Housing.

Note: The Alameda County median family income figure is used.

shelter include transients, persons recently released from institutions, persons who have been evicted without sufficient resources to find replacement housing, refugees, battered women, etc. Countywide, there are only 328 beds distributed among 15 emergency shelters. Of the shelters near Emeryville, five are in Oakland (138 beds) and one of which is in Berkeley (60 beds). Although estimates of the homeless are difficult to quantify, surveys conducted by the Emergency Services Network of Alameda County show the numbers far exceed the number of available beds. In a week-long survey in February 1985, aimed at reaching an educated guess of the number of unduplicated individuals seeking shelter and providing a profile of those using the County's shelters, the Emergency Services Network estimated nearly 950 different individuals sought shelter. Estimates by the County reveal up to 6,000 men, women, and children are turned away from County shelters and voucher programs every month. This figure represents a duplicated count; that is, many individuals have been counted more than once. Over three-quarters of those were turned away from shelters or denied service because of a shortage of bed space and voucher money. And the magnitude of the problem appears to be growing. Information provided by the Emergency Services Network reveals that on the average, shelter and voucher programs indicate their requests rose 25-50% between 1982 and 1984.¹ Neither the City nor the County has made any estimates of the problem in Emeryville, although the Emeryville Senior Citizen Center is aware of one or two individuals who lack housing.

In addition to the overall unmet demand, most of the emergency shelters are established to serve women and children. Consequently, families, young adults, single men, and individuals with mental health problems are among the groups who are underserved.

¹Emergency Services Network of Alameda County, 1984 Composite Profile Study, Controlled Intake Study, May 1985.

Objective

- A. Promote affordable housing opportunities for senior citizens, lower- and moderate-income residents, physically disabled residents, and female-headed families with children.

Policies

1. The City should permit second units in low density residential areas to serve the needs of lower- and moderate-income households, including senior citizens. These units are created within existing residential structures or as additions to the existing structure. Approval of second units should be subject to the following guidelines:
 - Second units should be considered as appropriate additions only to single family units;
 - Size of second units should be limited to control the number of occupants and their impacts on water and sewer service and on traffic;
 - Second units should conform to height and setback requirements applicable to residential construction in the zone in which the property is located;
 - The lot should contain sufficient space for one additional off-street parking space, unless this requirement is waived by the City; and
 - The rent should be affordable to lower-income tenants if State funding is used to construct the unit.
2. The City shall assist its special needs population in maintaining their homes by providing assistance in obtaining available funding. Possible funding programs for rehabilitation of units include Community Development Block Grant monies, Marks-Foran loans, and State Housing and Community Development deferred payment rehabilitation loans.
3. The City should offer incentives to encourage builders to construct housing meeting elderly and lower- and moderate-income family needs. These incentives may include density bonuses, reduced parking requirements, expedited permit processing, and/or fee waivers for affordable housing. In appropriate developments, inclusion of such units should be required (see further discussion under New Housing Opportunities).
4. The City should preserve the existing stock of residential hotels. The loss of these units would result in a reduction in the housing stock, much of which is the only housing affordable for lower-income households. Demolition or conversion of these hotels should occur only if provisions are made to replace the units with comparable units elsewhere.

5. The City should use its financial powers and resources to reduce the cost of housing and increase the supply of lower- and moderate-income housing. Tax-exempt bonds can be a source of below-market-rate interest financing, as can tax increment financing. Where direct financial assistance is made to an owner of rental housing, the City shall continue to ensure through Rent Limitation Agreements that the owner charges fair rents.
6. While local efforts to provide affordable housing shall be a priority, the City should still make maximum use of available Federal and State housing subsidy programs for elderly, lower-income, and disabled households. Because of the uncertain status of State and Federal programs, the City should concentrate first on using its own resources to encourage housing production. To the extent State and Federal funding is available, the City shall aggressively work to obtain financial commitments.
7. The City should encourage non-profit and limited equity ownership of housing. Non-profit housing development corporations can be created specifically to promote, assist, or sponsor housing for lower- and moderate-income households. Limited equity cooperative housing is housing owned by a non-profit agency, and is occupied by members of the cooperative who buy "shares" in the housing. In both instances, predevelopment or "seed" money is essential to getting started. The City should consider the feasibility of using its financial resources to assist these efforts.
8. The City should encourage the production/conversion of housing accessible to physically disabled residents and assist such residents in locating accessible housing units. The City should consider density bonuses of one unit for each new handicapped-accessible housing unit. "Accessible" means that the housing presents no physical barriers to handicapped people.
9. The City shall continue to enforce the State requirements for handicapped adaptability in new projects. "Adaptable" means housing whose entry and circulation are designed and constructed so that the unit can be made fully accessible by making relatively minor adjustments and additions rather than structural changes.
10. The City should assess the magnitude of the homeless problem in Emeryville and determine if services can be offered to assist them.

Housing Stock Characteristics

Housing Tenure and Type. In 1980, there were a total of 2,416 year-round housing units in Emeryville. Of the City's occupied housing units, 57.7% (1,231) were rented, while the remaining 901 units (42.3%) were owner-occupied. Single-family units (including mobile homes) accounted for 18.9% (402) of the housing stock, and the remaining 81.1% (1,730) were comprised of duplex and other multifamily units. Figure III-3 details the number and type of units situated in each census block group.

The North End contained the fewest housing units, less than 15% of the City's housing supply. Single-family detached units were the predominant housing type in this subarea of the City. The area which includes Emery Bay Village and the Triangle contained the greatest variety of housing types and accounted for a majority in all of the housing types, except structures with five or more units.

Altogether, this area accounted for one-third of Emeryville's housing supply in 1980. The newest residential development as of 1980 occurred almost exclusively (99%) as large complexes of five or more units. As a result of intensive development in this subarea, the Bayfront and Peninsula contained a majority (54%) of the City's housing units in 1980.

Approximately 635 units were constructed between 1980 and 1984, inclusive (see Table III-7). They are predominantly multifamily and owner-occupied. Pacific Park Plaza accounts for over 90% of this new supply. An estimated 60% of Pacific Park Plaza's occupied units are owner-occupied. In 1985, another 22 units were added to the housing stock.

Vacancy Status. In 1980, there was an overall vacancy rate of 11.8%. As shown in Figure III-3, virtually all of the vacant units were in large complexes of 5 or more units. One hundred and eighty of these vacant units were for sale or for rent; therefore, the actual vacancy rate for available units was 7.5%. The rental vacancy rate was 10.5%, while the owner-occupied vacancy rate was 5.4%.

Housing market analysts generally consider an ideal vacancy rate to be 6% for rental units and 2% for ownership units. Based on the composition of the City's housing, Emeryville's overall ideal vacancy rate would be 4.4%, determined as follows:

$$\begin{aligned}
 \text{Ideal Rate} &= \text{Fraction of Rental Stock} \times 6\% + \text{Fraction of Owner Stock} \times 2\% \\
 &= 58.8\% \times 6\% + 41.2\% \times 2\% \\
 &= 4.4\%
 \end{aligned}$$

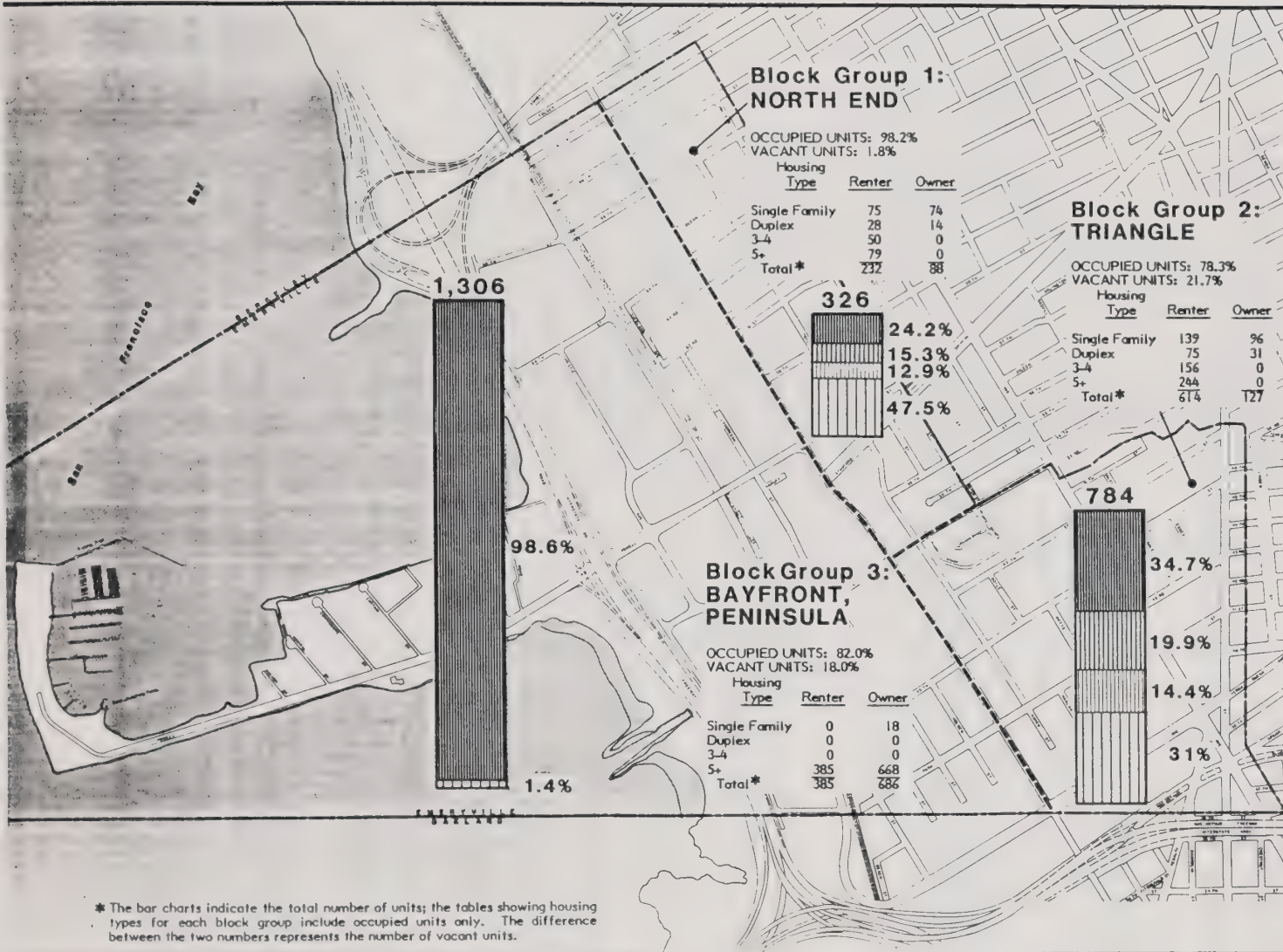
Emeryville's actual vacancy rate was, therefore, higher in 1980 than its ideal vacancy rate. However, the rate is greatly influenced by the construction on the Peninsula. In both the North End and the Triangle, the vacancy rates are well below the rate preferred by housing market analysts (see Table III-8).

Housing Age and Condition. The 1980 Census reported that nearly half of Emeryville's housing units were constructed after 1970; however, 98.6% of those units are situated in the Bayfront and the Peninsula. Of the remaining 1,302 units, 54% were built before 1940. The data reveal that 71.4% of those pre-1940 units are located in the Triangle.

Of the owner-occupied units, 69.1% were built after 1970, and 57.6% of the remaining units were constructed before 1940. Rental units built after 1970 accounted for 24.2% of all renter-occupied units. Of the remaining units, 54% were constructed prior to 1940.

To determine the condition of Emeryville's housing stock, a survey was undertaken by Connerly & Associates, Inc. of housing units within target areas of the North End and the Triangle. The Bayfront and Peninsula were not included in the housing condition survey because of their relatively recent construction; it was assumed that housing units in this area remain in good condition. The criteria used in evaluating the condition of housing units was based on the Uniform Housing Code, 1979 Edition, which is published by the International Conference of Building Officials. Units were evaluated based on this document's definition of substandard buildings.

FIGURE III-3
HOUSING
CHARACTERISTICS,
1980



* The bar charts indicate the total number of units; the tables showing housing types for each block group include occupied units only. The difference between the two numbers represents the number of vacant units.

TABLE III-7: YEAR-ROUND HOUSING UNITS BY TYPE

Type of Structure	North End			Triangle			Bayfront, Peninsula		
	1980	1980-84	Total	1980	1980-84	Total	1980	1980-84	Total
Single-Family									
Detached	155	0	155	221	1	222	0	0	0
Single-Family Attached	0	36	36	22	0	22	11	0	11
Duplex	42	4	46	113	2	115	0	0	0
3-4 Units	50	0	50	156	8	164	0	0	0
5 or More Units	79	0	79	272	0	272	1,288	582	1,870
Mobilehome	0	0	0	0	0	0	7	0	7
	<u>326</u>	<u>40</u>	<u>366</u>	<u>784</u>	<u>11</u>	<u>795</u>	<u>1,306</u>	<u>582</u>	<u>1,888</u>

Source: 1980 Census of Population and Housing; City building permit forms for units constructed between 1980 and 1984.

TABLE III-8: VACANCY RATES BY NEIGHBORHOOD, 1980

	North End	Triangle	Bayfront, Peninsula
Vacant Units for Sale	0	0	51
Block Group ownership vacancy rate	0	0	6.1%
Vacant Units for Rent	6	27	96
Block Group rental vacancy rate	2.5%	4.2%	20%
Combined Vacant Units for Sale and for Rent	6	27	147
Block Group vacancy rate	1.9%	3.5%	12.1%

Of the units surveyed in the North End and Triangle during December 1983, 69.1% were found in good condition, 20.3% in fair condition, and 10.6% were classified as being in poor condition. Units receiving a good rating either had no or very minor deficiencies. "Fair" units had several deficiencies, but the cost to improve them to a good rating was less than \$5,000 in most instances. Units classified as poor exhibited significant deficiencies and would require major rehabilitation to receive a good rating.

Objectives

- B. Preserve the City's good housing stock.
- C. Allocate City resources to rehabilitate and upgrade existing residential areas.

Policies

1. The City shall use local, state, and federal resources when available to assist lower- and moderate-income homeowners and landlords renting to lower- and moderate-income tenants in maintaining their units in sound condition. The sources include the Community Development Block Grant Program, California Housing Finance Agency, and the Department of Housing and Community Development. To maximize use of these limited resources, the City should target its application of the resources to areas where it would make a visible, long-term improvement. Criteria for selecting appropriate areas should include:
 - Units are basically sound but in need of repair.
 - Large number of units within area are owner-occupied.
 - Average repair cost is consistent with resources available.
2. The City should establish a dual program of incentives and code enforcement to maintain private property. As much as possible, housing rehabilitation should be voluntary. Intensive marketing efforts should be directed first to the target areas where an observable impact can be made. As part of this program, the City should periodically survey housing conditions to identify substandard housing. Building inspectors should have discretion in determining compliance with housing and building codes. If the unit does not pose a hazardous condition for the occupants, the program should allow the inspector to determine if a citation is warranted.
3. The City should continue to offer its rental rehabilitation loan program which enables applicants to obtain below-market interest rate loans to improve rental property and normally requires rents to be controlled for 5-15 years.
4. The City should discourage the demolition or conversion of housing in sound condition. The City should investigate means to secure replacement housing for those dwelling units with units occupied by persons and families of lower- or moderate income. Preferably the replacement housing should be in the same location or at least in the immediate vicinity. The project proponent could be required to construct the housing, or could contribute fees into a fund for the purpose of constructing housing.

5. The City should aggressively advertise the availability of various housing programs and monies to assist in the rehabilitation and upgrading of the housing stock.

Housing Costs

Rental Housing Costs. Gross rent is defined by the Census as "contract rent plus the estimated average monthly cost of utilities and fuels paid by the renter." In 1980, the median gross rent was \$226 in Emeryville, 15% lower than the comparable Alameda County rent figure (\$266). Approximately 60% of the units in the North End and the Triangle rented for \$150-250. By contrast, median rents in the Bayfront and Peninsula were in the \$350-\$400 range. Since 1980, rents have risen appreciably. The 1984 rent for a 2-bedroom apartment unit similar to those in Emery Bay Village equals \$525-\$600 per month.

Ownership Housing Costs. In Emeryville, the 1980 median monthly ownership costs equalled \$308 with a mortgage and \$76 without a mortgage. In Alameda County, the comparable figures for the owner of a median priced home were \$394 per month and \$100 per month.

Households Overpaying for Rent or Ownership. Under current regulations regarding housing elements, the State Department of Housing and Community Development defines household "overpayment" as households which contribute in excess of 30% of their income to housing. Since Emeryville's population consists of a large number of single adults, which indicates an ability to contribute a larger share of income to housing without necessarily being overburdened, it is generally reasonable to look at households devoting 35% of their income to housing as a measure of overpayment. Table III-9 presents the number of households paying over 25% and 35% of their income for housing in 1980. Several significant conclusions can be drawn from the table:

- The majority (86%) of households paying more than 25% had incomes of less than \$15,000, and almost all (98%) households paying more than 35% had incomes of less than \$15,000.
- Ownership households overpaying for housing represent a small portion (8.3%) of all households paying more than 25%; however, all of these households were located in the Triangle. In addition, the majority (83%) of ownership households paying more than 25% actually were paying in excess of 35%.
- For households with incomes over \$15,000, a large portion (825) of rental households paying more than 25% were located in the Bayfront and the Peninsula. None of these overpaying rental households paid more than 35%, however. This indicates the presence of a large number of singles or married couples without children who are able to contribute a large portion of their income for rent.
- In 1980, 15% of Emeryville's households paid more than 35% of their income for housing; 25% of the City's households paid in excess of 25% for housing.

TABLE III-9: HOUSEHOLDS OVERPAYING FOR HOUSING

Housing Income	North End		Triangle		Peninsula Bayfront		City Total	
	Renter	Owner	Renter	Owner	Renter	Owner	Renter	Owner
\$0-4,999								
25%	51	0	106	7	12	0	169	7
35%	40	0	90	7	12	0	142	7
\$5,000-9,000								
25%	22	0	126	16	32	0	180	16
35%	22	0	58	8	32	0	112	8
\$10,000-14,999								
25%	18	0	26	17	54	0	98	17
35%	6	0	7	17	41	0	54	17
\$15,000-19,000								
25%	14	0	0	7	22	0	36	7
35%	0	0	0	7	0	0	0	7
Over \$20,000								
25%	0	0	0	0	38	0	38	0
35%	0	0	0	0	0	0	0	0

Development Fees, Construction and Financing Costs. A myriad of different components go into determining the price of housing. Development fees, charged by the City, to review proposed projects represent one cost to the developer/builder. Emeryville's fees are comparable to those of other Bay Area communities and range from \$200 for a petition for a development review to \$5,000 for entering into a development agreement. The full range of development fees is presented in Appendix A.

More prevalent to the housing cost equation are the costs associated with the land, the construction, and the financing. October 1985 estimates by the Bank of America of the construction costs for a standard single family home were \$44.67 per square foot. An average 1,200-square-foot home with a 200-square-foot garage, without land costs, would cost \$57,000 to build.

Assuming improved land costs of \$35,000, this minimum cost home, without any mark-up to reflect market conditions, would sell for \$92,000. If a potential home-buyer could afford a 10% down payment, a mortgage of \$82,800 would be required. Since banks require the principal and mortgage payments to be no greater than 30% of the potential home-buyer's gross income, a salary of \$29,300 would be needed with interest rates at 10% and a salary of \$42,000 would be needed with interest rates at 15%. Comparing these requirements to Emeryville's current income profile, the average income of an Emeryville household would not qualify for the loan at 10% interest rates. Thus, the only hope to encourage greater home ownership in

Emeryville lies in relaxing development standards, promoting smaller units, or offering financial incentives to reduce the costs of construction for developers/builders.

Objectives

- D. Develop and implement programs to reduce the cost of new housing.
- E. Review City procedures, fees, and regulations for their effect on housing costs.

Policies

1. Wherever feasible, the City should encourage higher residential densities to reduce developers' costs, which in turn should enable housing costs to the renter or purchaser to be more affordable. The City should offer residential developers bonuses in terms of additional density for inclusion of affordable units for lower- and moderate-income households.
2. The City should seek inclusion of lower- and moderate-income units in new housing development. In all mixed use projects on parcels greater than 200,000 gross square feet, 20% of the enclosed building space should be devoted to housing units affordable to lower-income households.
3. Manufactured housing shall be permitted in the City's low density areas, delineated on the Land Use Plan, Figure III-14. Because mobile homes (on a foundation and certified under the National Mobile Homes Construction and Safety Standards Act of 1974) and pre-fabricated housing tend to have lower construction costs than standard housing, they offer significant cost savings.
4. The City shall explore the feasibility of issuing tax-exempt mortgage revenue bonds to offer low interest loans to lower- and moderate-income households or to reduce the costs of housing construction for developers.
5. The City should waive or reduce its development fees for projects that include housing units for lower-income households.
6. The City shall review its codes and building requirements to determine if some of the provisions unnecessarily increase the cost of housing. Many communities have encouraged lower cost housing by reducing minimum lot area, frontage, and setback requirements. The City shall consider whether it is necessary to have side yard requirements on each side and whether its front and rear yard requirements should be reduced.
7. Given the high cost of ownership and the large proportion of renters in East Emeryville, the City should encourage new rental housing construction to the maximum extent possible. The City should safeguard tenants of projects which are assisted with substantial City financial support from excessive rent increases.

Housing Opportunities

The population and employment growth anticipated for Emeryville necessarily implies an increase in the demand for housing. Figure III-2 shows ABAG's projections of household growth over the next 20 years. Although the majority of the new households in the Bayfront and Peninsula would continue to be similar to those occupying the City's more recent residential development, i.e., predominantly one- or two-person middle- to upper-income households, the City has expressed a strong desire to attract family households, provide for its lower income households, and accommodate artists in joint live/work space. The following discussion estimates housing needs in Emeryville, by looking at the City's own growth in households in conjunction with what ABAG considers to be the City's fair share to meet the regional housing needs.

Household Formation. As shown in Figure III-2, the City is projected to grow by 410 households, from 2,950 estimated in 1985 to 3,360 in 1990. New housing construction must keep up with this housing demand.

Artists' Live/Work Space Needs. Artists are only one category of people desiring the opportunity to live and work at home. Living in central cities has become increasingly acceptable and even desirable to a larger number of people. However, the arts community has characteristics which merit special consideration in terms of housing and other essential needs: 1) the special cultural values which artists and art bring to Emeryville, and 2) the fact that producing art, unlike some other economic activities, is not a high profit-generating activity and will tend to be displaced if forced to compete in the open market place on the same footing with other businesses.

In Emeryville, as in San Francisco, New York and other cities, the actual use of warehouse or manufacturing buildings by artists for live/work space has preceded legislation and policy regarding such use. The advantages to cities of encouraging live/work opportunities for artists are several. Artists are both an economic and cultural asset for any city. A diverse and vital arts community will strengthen the economic base of the city and create urban amenities. In addition, the provision of live/work space helps to satisfy the housing needs of a segment of the population that is assumed to be less able to pay for conventional market rate housing.

In spite of these benefits, many communities have undergone considerable debate over the desirability of allowing live/work space for artists. Among them are:

- Why should live/work space be made available to artists alone?
- What criteria should be used to define an artist?
- Does encouraging artists' live/work space displace businesses or other low-income groups?
- Should more stringent building code standards for residential quarters apply to live/work space?
- Does encouraging live/work space result in an upgrading of an area's land values which may in turn become too expensive for the artists?

Emeryville has adopted the premise that the artist community is an integral part of the community. The arts and crafts industry has played an important role in Emeryville's redevelopment process. It was among the first to reuse the large industrial facilities that have been vacated by traditional manufacturing firms. Attracted by inexpensive rents, the loft spaces and good proximity to UC Berkeley, many of these arts and crafts people created a market for space in restored buildings. This demand has increased the pace at which buildings are being renovated and helped smooth the transition between the older industrial land uses and the newer more modern ones.

Unlike other manufacturing activities, the arts and crafts people have tended to cluster in specific areas of the City. The Emeryville Artists Cooperative has approximately 100 members occupying a former building of the Shell Research Complex on 45th Street subdivided into about 60 units. Another group of about 20 live-in artists has leased space at Hollis and 63rd Streets. This spatial concentration is a result of where space has been available and the natural tendency for artists to congregate. Space requirements vary with the type of art being produced. Painters, small studio photographers, etc. can generally operate effectively with about 1,100 gross square feet. Sculptors working with large pieces, large studios, etc. require more space. In the future, as space in the old manufacturing building becomes more desirable for office uses, there will be increasing pressure to displace the arts and crafts people with activities capable of paying higher rents. However, this community's contribution to Emeryville's culture and diversity are as important as those of any other residents and small business people.

Regional Housing Need. While State law mandates that local communities satisfy their housing demand, they must also seek to meet a share of the housing need of persons at all income levels within the area significantly affected by a jurisdiction's general plan. This determination of regional housing need is performed by ABAG and must take into account six factors:

- market demand for housing
- employment opportunities
- availability of suitable sites and public facilities
- commuting patterns
- type and tenure of housing
- housing needs of farmworkers.

ABAG's projected housing need covers the period 1980-1990. The projected housing need is the number of units needed to fill the existing need, to provide enough units to accommodate the projected household growth in the County and its cities, and to provide for sufficient vacancy to maintain mobility in the housing market. In terms of local housing element planning, it is these figures that are the most critical to review. To determine Emeryville's housing requirement for 1986-1990, the number of units constructed for the years 1980-1985 have been tallied and subtracted from the 1980-1990 total of 1,221 needed units. Between 1980 and 1985, 638 residential units were constructed in Emeryville. In addition, rehabilitation programs increased the rental housing stock by 19. These units were considered uninhabitable prior to the program. Thus, over the first half of the decade 657 new units were produced. Subtracting this net addition from ABAG's projected need for Emeryville leaves 564 units to be added over the next five years. A community can promote additional housing opportunities by a number of means, such as rehabilitation, new construction, rezoning to increase density, etc., in order to satisfy its share of regional housing need.

Of the 657 new units since 1980, about 90% were part of the Pacific Park Plaza which would be considered primarily for the "above moderate" income households. Emeryville has had some success in meeting its moderate- and lower-income household needs through projects such as Emery Glen, which provided 36 units of lower-income units, and Emery Bay Village, which provided 112 units of moderate-income units. Similarly, the Neighborhood Conservation Services has completed rehabilitation work in its first target area, having raised the percentage of housing in good condition from 21% to 72% and decreased the percentage of housing in poor condition from 29% to 4%. As a result of these additions to the housing stock, Emeryville's housing objectives over the next five years are to provide 564 units, of which 317 would be for very low-income, 184 would be for low-income, 84 would be for moderate-income, and the balance for above moderate-income households.

Potential Sites for Residential Development. A field survey in late 1984 of vacant land for residential development identified about 16 sites where housing could be built. The Redevelopment Agency also possesses approximately eight undeveloped parcels across the street from Emery Bay Village. The surrounding development tends to be single family detached structures or units in structures with 2-4 units. Assuming two units per lot, an estimated 48 units could be built.

In addition to these sites, an assessment of underutilized lands was conducted and is described in the Land Use Element. Of the 180 acres of lands characterized with low utilization, about 14 acres could be available for residential development. Proposed densities for these areas, in accordance with the Land Use Plan, are higher than the surrounding development and would permit development of about 185 units.

A large portion of the Bayfront and Central Emeryville are designated for mixed use or for a housing/regional retail option. Housing would be a desired use as part of a mixed use development. Because of the flexibility available to developers in designing their projects and the uncertainty over whether the housing or regional retail option would be pursued, it is not feasible to project the number of potential residential units built on these sites. Similarly, there is a rigorous effort in the Plan to provide opportunities for people, especially artists, to live in their work places, primarily in the City's industrial areas. Depending on the financial assistance that can be secured to create live/work space, this use of typically non-residential buildings represents a major source of housing.

Objectives

- F. Promote new housing opportunities for all economic groups of both the City and a fair share of the region.
- G. Promote development of a variety of housing types in the City, including housing types which will attract family households.
- H. Encourage opportunities for people to live and work in the same space.

Policies

1. The City shall encourage development of housing on surplus, underused, and vacant public lands. Presently, there are few such opportunities but as lands become available and if they are not needed for other public purposes, they should be rezoned and sold or leased for housing development. Redevelopment Agency lands across the street from Emery Bay Village shall be developed for residences and should be lower- and moderate-cost housing. Although the AC Transit Maintenance Facility was recently constructed, the ultimate long-range use of this site shall be residential.
2. Mixed use areas shall be desirable locations for medium density residential development. In reviewing mixed use projects, the City should encourage a mix of activities including residential development, where residents would not be adversely affected by other activities and vice versa.
3. The City should facilitate the conversion of underused industrial areas for residential or live/work use. Several sites in the North End, currently occupied by industrial businesses, would be appropriate for future residential or live/work development (see Figure III-4 in the implementation discussion). Similarly, in the Triangle, residential development should be the primary land use north of 41st Street, and live/work space could be permitted if not disruptive to existing residences. These sites offer the opportunity to create entirely new residential neighborhoods that will serve several purposes:
 - they expand the City's housing stock,
 - they increase the population base to create a market for new retail investment,
 - they increase the population base necessary to support an expanded recreational system, and
 - they offer the potential to connect the residential portions of the North End and the Triangle.
4. In the conservation areas, designated in Figure II-4, the City shall encourage infill housing in established neighborhoods. New housing construction should be encouraged:
 - on vacant sites not designated for open space or desired by the neighborhood as a mini-park,
 - on sites where nonconforming uses have been terminated,
 - above commercial development in neighborhood shopping areas and along San Pablo Avenue,
 - on sites with buildings that cannot feasibly be rehabilitated.
5. In the revitalization and new development areas, designated in Figure II-4, the City should consider the potential for residential development as part of a mixed use project. Because these areas represent relatively large areas, the City shall

require master development plans to promote well-designed, coordinated development projects, and housing shall be provided in these projects at densities greater than 20 dwelling units/gross acre.

6. Second units shall be permitted in low density residential areas, as a means of providing additional housing for lower-income tenants. Conditions for approval of such units are described earlier under policies for the Special Needs Population.
7. The City shall encourage a variety of housing types. The permitted residential densities shall be flexible to allow a variety of different housing types, although consideration should be given to the prevailing building type in the surrounding area. For residential projects greater than 15 units, the City should encourage a minimum of 20% of the units be designed to accommodate families of three or more members.
8. The City shall permit live/work developments in all land use classifications other than residential, office, open space, and general industrial (see Section F: Land Use, of this chapter for definitions).
9. The City shall develop guidelines for granting live/work use permits, but all such permits shall be discretionary.
10. The City should base its decision to grant such permits on, among other things:
 - the provision of lower income housing;
 - the requirement of business licenses and/or promised residency;
 - a relationship to fine or applied arts.
11. Policies and standards such as parking, open space, and health, safety, and building codes should allow flexibility to accommodate live/work developments, provided that such development would not adversely affect adjacent development. Acceptable ranges for these development standards shall be defined in the zoning ordinance.
12. The City should prohibit discrimination against households with children and encourage the construction of units suitable for families with children.
13. The City shall encourage housing opportunities for all economic groups throughout the City, especially the elderly and single-parent families. The City should explore strategies to retain some low- and moderate-income housing whenever actions are proposed that may displace these units.

Residential Energy Conservation

In addition to the initial costs of housing, a community should also be aware of continuous, life-cycle costs. One of the most prevalent life-cycle costs incurred by the residents of Emeryville is the cost of energy required to keep a household and live comfortably. For this reason, it is important that energy conservation measures are identified and incorporated into City housing policies.

Energy Use/Costs. The two main utility costs facing renters and homeowners arise from space heating and water heating. In 1980, about 50% of Emeryville's households used gas for space heating and 50% used electricity for space heating. Among the three census block areas, the energy use ratio is not evenly divided. In East Emeryville, approximately 85% of all homes utilize gas for home heating. Housing units in the Bayfront and Peninsula, however, depend almost exclusively on electricity (87.1%) for space heating. The contrasting utility types used in these areas is the result of the relatively young age of the housing stock west of the railroad tracks (84% of all units were constructed after 1970), in comparison to the age of the housing stock in the North End and the Triangle. Homes in the Bayfront and the Peninsula also rely considerably more on electricity for water heating (60% of all units) than the rest of the City (2% of all units). Overall, 32% of all housing units in Emeryville use electricity for water heating purposes.

Energy Conservation. In order to ensure energy conservation measures statewide, the Energy Commission created conservation standards for single-family homes (July 1983) and multifamily units (January 1984). These new standards require newly constructed homes to make use of a series of energy conservation measures to ensure a minimum level of energy efficiency. The Emeryville Building Department enforces these standards on a local level. Developers and builders can use a number of energy/conservation measures to attain the standards, including wall, ceiling, and floor insulation; energy efficient equipment; and double-glazed windows. Additionally, a local weatherization program, which is part of the City's rehabilitation program, has been implemented to help reduce energy costs for residents. Since 1978, 180 households have been involved in the rehabilitation program.

Objective

1. Maintain development and construction standards that encourage energy conservation in residential uses.

Policies

1. The City should require energy-conserving siting, construction, space conditioning, appliances, and lighting in new residential development.
2. The City should encourage utilization of passive solar energy systems and other energy savings and water conservation measures.
3. The energy efficiency of existing residential structures should be increased through public education and financial assistances to lower- and moderate-income families. The City's rehabilitation program is an example of a effective program to help reduce energy costs for residents.

Housing Implementation Program

Existing Housing Programs. The City's current efforts to improve the quality and availability of housing in Emeryville serve to implement partially the policies outlined in the preceding sections. These efforts are described below.

New Housing. New housing construction has occurred for a range of different income households. Special intervention was needed to provide new housing for lower- and moderate-income families. The major projects are described below.

- **Emery Glen.** In conjunction with the Alameda County Housing Authority, the City had 36 units constructed for low-income families in 1983. The project is fully occupied and contains 26 two-bedroom and 10 three-bedroom units. If units become vacant, they will be offered to new applicants whose eligibility will be screened by the County Housing Authority.
- **Emery Bay Village.** The City purchased the site and offered financial backing to the developer of this 112-unit condominium project for moderate-income families. A variety of housing types were constructed: 16 1-bedroom, 70 2-bedrooms, 4 4-bedrooms. The prices of the units were \$70,000 to \$100,000.
- **Pacific Park Plaza.** A 30-story high-rise, this condominium project offers 582 units in the City's redeveloping Bayfront area. With 392 1-bedroom and 190 2-bedroom units, the project caters to a number of young professional singles and married couples without children.

Rehabilitation. The City operated until 1985 two complementary rehabilitation programs. The City-sponsored Neighborhood Conservation Services conducted intensive neighborhood revitalization programs within a target area of the City. Participation in the program was voluntary, but serious outreach efforts were made to encourage homeowners to take advantage of loans for rehabilitation, of sidewalk and tree planting funds, etc. Last year the Neighborhood Conservation Services combined with the citywide rehabilitation program, which offers assistance to property owners who did not live within the Neighborhood Conservation Services' target area. Services available to Emeryville residents include:

1. A painting assistance program (paint and labor, in some cases, furnished by the City).
2. A rehabilitation loan program using below market interest loans and deferred loans.
3. A smoke detection program for lower- and moderate-income families.
4. A physical improvement program including removal of debris and junk.

Community Development Block Grant Program. The City is not eligible on its own to receive federal Community Development Block Grant (CDBG) monies. It receives these monies as a part of the "Alameda Urban County." Emeryville's application to the County's Housing and Community Development Department earmarks the funds for rehabilitation.

Section 8. Under the Federal Section 8 Existing Program, the Alameda County Housing Authority provides direct rental subsidies to qualified renter households.

Commitments for assistance are made for one year at a time, because of the tenuous nature of Federal funding. The subsidy equals the difference between what the household can afford to pay (defined as 30% of their gross income) and the rent charged for a unit. The County Housing Authority has indicated that there are about 70 subsidies currently used in Emeryville.

Fair Housing. In order to ensure compliance with fair housing laws, the County contracts with different organizations to offer assistance and to perform occasional audits. This service is currently being offered to Emeryville along with several other communities in northern Alameda County by Operation Sentinel.

Five Year Program. State law requires that objectives for the maintenance, improvement, and development of housing be quantified. The following objectives specify Emeryville's targets for the five year period, 1986-1990:

- Housing Development
 - Approve new construction: 564 units
 - Provide lower-income housing: 501 units
- Preservation and Maintenance
 - Rehabilitation: 100 units

Given the present absence of State and Federal funding, the City will encounter obstacles to achieving its housing targets. Nevertheless, the City is committed to increasing housing opportunities and the cornerstone of its housing program will be local initiative. The City shall use Table III-10 as its program document for implementation. The table identifies specific actions, indicates the responsible agency, and sets forth a target time frame for implementation. Key features of the City's program include rezoning underutilized industrial lands, requiring large-scale mixed use projects to provide housing, permitting live/work spaces, permitting the construction of second units, waiving development fees for projects with lower- and moderate-cost housing, and offering density bonuses to developers for production/conversion of units for elderly or disabled lower-income households.

C. ECONOMIC DEVELOPMENT

Introduction

The City's employment base can best be described as transitional. The historical industries that have accounted for the majority of the City's jobs are relocating; the new industries that have located in the City are smaller-scale in operation and much more labor-intensive. Emeryville's Bayfront, with its development potential and locational advantage relative to other East Bay communities, is in a position to see a dramatic transformation of its economic base. At the same time, East Emeryville represents an opportunity to maintain and encourage expansion of small manufacturing operations.

TABLE III-10: HOUSING PROGRAM, 1986-1990

<u>Objective</u>	<u>Action</u>	<u>Agency</u>	<u>Time Frame</u>
Affordable Housing Opportunities for Special Needs Population	1. Revise zoning ordinance to permit second units as an addition to single family units.	City	1987
	2. Seek CHFA commitments for the Second Unit Financing Program by which owner-occupants of single family dwellings can obtain loans for second units. Second units must be occupied by a lower-income tenant.	City	ongoing
	3. In screening applicants for rehabilitation loans, give priority to loans which will benefit lower- and moderate-income households.	City	ongoing
	4. Offer a density bonus for production/conversion of units for elderly or disabled lower-income households, possibly equal to one additional unit for every unit produced/converted. Consider waiving parking requirements for such units.	City	1987
	5. Encourage mixed use projects greater than 200,000 gross square feet to provide 20% of the enclosed space for residential units affordable to lower-income households.	City	initiate 1986
	6. For projects with 15 or more units, encourage 20% of the units for families with three or more members.	City	initiate 1987
	7. Encourage deed restrictions on all new affordable units located on individual parcels (i.e., not second units or apartment buildings) which have been constructed with City financial assistance to limit prices upon resale. The City shall be given the right of first refusal, meaning when the homeowner wants to sell, the unit must first be offered to the City. The City will then offer it to the next person on the waiting list.	City	ongoing
	8. Determine the desirability/interest in establishing a non-profit housing development corporation. Such corporations may perform all the initial ground work and sell the package to a profit-motivated developer, construct the housing as part of a joint venture with a profit-motivated developer, or develop the housing alone. Seed money to assist such corporations is available from CHFA's Development Loan Program. The State Housing & Community Development Predevelopment Loan Program provides 7% loans to government agencies and non-profit corporations, which can be used for purchasing land or land options, payment of fees and permits, and other costs related to pre-development expenses. To the extent funds are available, non-profit sponsors may qualify for HUD Section 202 Direct Loans for Housing for the Elderly or Handicapped. Such loans can be used for new construction or rehabilitation.	City; approved mortgage lender; non-profit corporations	ongoing

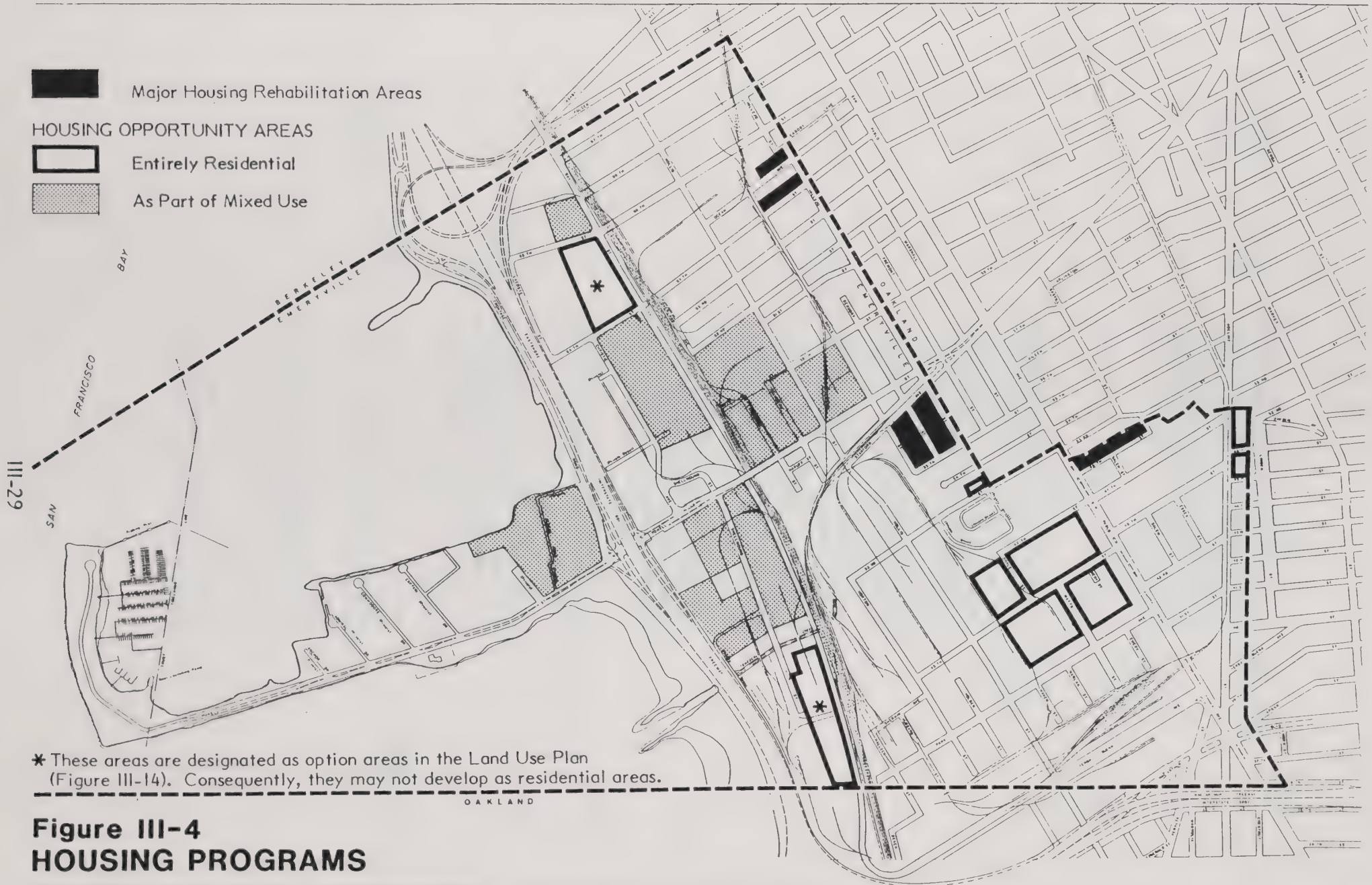
	9. Continue to publicize Section 8 Existing Program which provides rent subsidies to lower-income families.	City; Alameda County Housing Authority	ongoing
	10. If funds become available, apply to the State Housing & Community Development Special User Housing Rehabilitation Program (SB-26). Deferred-payment loans are available for the acquisition and/or rehabilitation of substandard apartments and group homes for the elderly or handicapped.	City	ongoing (currently no funds available)
	11. If funds become available, apply to the State Housing & Community Development Independent Living Housing Assistance Program. Rental housing payment subsidies are available to very low-income developmentally disabled, mentally disordered, or physically disabled persons who are receiving living skills training.	non-profit human services agencies	ongoing (currently no funds available)
	12. If funds become available, seek grants to assist seniors in finding others with whom they can share housing. The grants from the State Housing & Community Development Senior Citizens Shared Housing Program can be used for outreach, information and referral, client counseling, placement, and follow-up.	City; County Housing & Community Development; non-profit sponsors	ongoing (currently no funds available)
	13. Investigate the magnitude of the homeless problem, and consult with social services agencies on potential remedies.	City; Emergency Services Network of Alameda County	1986
Rehabilitation	1. Target Community Development Block Grant (CDBG) monies for rehabilitation and neighborhood revitalization. Past CDBG funds have been used to improve sidewalks and provide landscaping in rehabilitation target areas. Monies from the Redevelopment Agency shall continue to be used to finance a revolving loan fund to make low-interest loans available for rehabilitation.	City; Re- development Agency; County Housing & Community Development	ongoing
	2. Establish a systematic housing code enforcement program. The purpose is to assist property owners in upgrading their structures, relying on voluntary compliance. It is essential that the Building Inspector be given freedom to exercise his judgment in enforcing the Uniform Building Code and allowed to take into account individual circumstances in determining when and how violations will be cited. For example, non-hazardous violations may be overlooked if the household is of limited resources. Systematic inspection should concentrate first on target areas where an immediate visual impact can be made. Potential target areas are identified in Figure III-4.	City	1987

Major Housing Rehabilitation Areas

HOUSING OPPORTUNITY AREAS

Entirely Residential

As Part of Mixed Use



* These areas are designated as option areas in the Land Use Plan (Figure III-14). Consequently, they may not develop as residential areas.

Figure III-4
HOUSING PROGRAMS

EMERYVILLE GENERAL PLAN

SEDWAY COOKE ASSOCIATES

Urban and Environmental Planners and Designers

scale in feet 0 200 400 600 800 1000

2000



	3. If funds become available, apply to the State Housing & Community Development Deferred Payment Rehabilitation Loan Program (SB-966). Funds can be used to rehabilitate housing occupied by lower- and moderate-income homeowners and renters. The maximum loan amount is \$10,000 per unit with a maximum of \$100,000 for a rental property.	City; non-profit corporations	ongoing (currently no funds available)
Reduction of Housing Costs	1. Revise zoning ordinance to permit manufactured housing in the Residential (R) Zoning District.	City	1986
	2. Pass resolution waiving fees for the production of units affordable to very low-income and low-income households.	City	1986
	3. Review zoning ordinance and building code for standards or restrictions that inflate housing costs. Where elimination or reduction of such standards can be achieved without jeopardizing public health and safety, the City shall amend the ordinance and code.	City	1987
	4. Investigate feasibility of issuing tax-exempt mortgage revenue bonds to help rehabilitate, purchase, or reduce costs for projects providing lower-income housing. Proceeds can be used to raise mortgage insurance and mortgage loans to be offered at below-market rates to qualified applicants. The monies can be used for rehabilitation or new construction. The City's ability to issue bonds depends on the bond market and interest rates, as well as state and federal legislation. Current discussions at the federal level may eliminate the use of these bonds for housing.	City; Redevelopment Agency	ongoing
	5. Revise zoning ordinance to permit higher residential densities consistent with the land use policies contained in this Plan.	City	1986
	6. Advertise CHFA Cal-First Home Buyers Program (AB-3057). (This program provides second-mortgage financing that will buy down interest rates during the first four years of ownership. This enables a borrower to qualify for a conventional first mortgage at a lower initial interest rate.	City; CHFA; approved mortgage lender	ongoing
New Housing Production	1. Develop housing on vacant redevelopment project lands in the North End and in the Triangle, consistent with the land use policies contained in this Plan.	Redevelopment Agency	dependent on developer initiative
	2. Rezone areas identified in Figure III-4 as residential development opportunity areas. This would involve rezoning portions of the Bayfront, Pepsi-Cola, Del Monte, and the AC Transit maintenance facility.	City	1986
	3. Revise zoning ordinance to include a mixed use district permitting residential projects.	City	1986
	4. Revise zoning ordinance to permit live/work developments.	City	1986

	6. Investigate the possibility of using City funds to assist non-profit and limited-equity cooperatives in the acquisition of housing sites or in rehabilitation of existing buildings.	City; Re-development Agency	ongoing
	7. Continue to enforce anti-discrimination laws and seek assistance of County in monitoring compliance.	City; County Housing & Community Development, Operation Sentinel	ongoing
	8. Pursue state funds if available: ● HCD Rental Housing Construction Program (AB-333/SF-229)--Funds are made available for development of new rental units by private, non-profit, or public-agency sponsors. At least 30% of the units must be for low-income and very low-income households. ● CHFA 80/10/10 Rental Housing Mortgage Loan Program--Multifamily rental housing must provide 10% of the units for low-income, 10% for very low-income, and 80% at market rate. ● CHFA Multifamily Rehabilitation and In-fill New Construction Program--Provides for new construction and rehabilitation of existing apartments, focusing on projects of 5-20 units. ● HUD Sections 221(d)(3) and (4)--Provides funds to finance construction or rehabilitation of multifamily rental or cooperative housing for low-income and moderate-income families.	City; non-profit sponsors; builder/developer	ongoing
Energy Conservation	1. Continue to administer State Title 24 Energy Conservation Building Standards for Residential Structures.	City	ongoing
	2. Continue to advertise rehabilitation loan program, which makes low-interest loans available for weather-stripping, among other improvements.	City	ongoing

TABLE III-II: EMPLOYMENT BY INDUSTRY, 1984

	<u>Peninsula</u>		<u>Bayfront</u>		<u>East Emeryville</u>		<u>City Total</u>	<u>%</u>
	<u>#</u>	<u>%</u>	<u>#</u>	<u>%</u>	<u>#</u>	<u>%</u>		
Construction	157	7.1	65	3.3	141-143	1.6	363-365	2.8
Manufacturing	613	27.7	780	40.0	4,347- 4,351	49.6	5,740- 5,744	44.4
Wholesale	73	3.3	209	10.7	1,154	13.2	1,436	11.1
Trucking/warehouse	0	--	274	14.1	193	2.2	467	3.6
Finance, insurance and real estate	376	17.0	125	6.6	59	0.7	558	4.3
Retail	320	14.4	117	6.0	542-548	6.2	979-985	7.6
Service	386	17.4	170	8.7	1,224- 1,228	14.0	1,750 1,754	13.5
Mixed uses:								
Manufacturing/service	0	--	0	--	52-57	0.6	52-57	0.4
Manufacturing/retail	0	--	0	--	15	0.2	15	0.1
Manufacturing/wholesale	0	--	136	7.0	513	5.8	649	5.0
Wholesale/retail	0	--	28	1.4	99	1.1	127	1.0
Wholesale/service	0	--	40	2.1	2	--	42	0.3
Retail/service	0	--	0	--	194-195	2.2	194-195	1.5
Wholesale/retail/ manufacturing	0	--	0	--	100	1.1	100	0.8
Public	175	7.9	0	--	0	--	175	1.4
Unknown	<u>115</u>	<u>5.2</u>	<u>6</u>	<u>0.3</u>	<u>137</u>	<u>1.6</u>	<u>258</u>	<u>2.0</u>
Total	2,215	100.0%	1,950	100.0%	8,772- 8,817	100.0%	12,905- 12,937	100.0%

Source: Contacts Influential, October 1984; SCA.

Jobs in Emeryville

Overall, approximately 12,900 people are employed in Emeryville, or an estimated 2.4% of the County's 1985 employment projection of 535,900. Although its portion of the regional share is small, the City is a major "jobs exporter." Relative to its labor

force of 2,157 workers in 1980, the City has a major surplus of jobs, with about six jobs for every employed resident, compared to one job for every employed resident in the County. The City's traditional image as an industrial city is supported by its employment base. Approximately 45% of the City's employees work in manufacturing, primarily in machinery, foods, furniture, printing, or film. By contrast, less than 15% of the County's employment is in manufacturing. As shown in Table III-11, other industries, such as wholesale and service, also account for substantial employment in Emeryville but are relatively minor compared to the numbers employed in manufacturing.

Over two-thirds of the City's jobs are located east of the railroad tracks in East Emeryville. Most of the City's largest employers, such as Cetus, Grove Valve & Regulator, and Wonder Bread, are located in this area. Nearly one-half (49.6%) of East Emeryville's 8,800 employees work in the manufacturing industry. More significantly, this accounts for over three-quarters of the City's manufacturing employment, suggesting that this type of employment is highly concentrated in this area. Table III-11, shows that, in fact, East Emeryville represents the primary job location for a number of different industries, including wholesale (80%), retail (55%), and service (70%).

The Bayfront represents the City subarea with the greatest potential for change. Two-thirds of the area's 1,950 employees work in large-scale manufacturing, wholesale, and trucking activities, such as Judson Steel, Pfizer Company, and Garrett Freightlines. Because of its location between the railroad and the freeway, the Bayfront is ideal for trucking and warehousing. This is reflected in the employment figures which show nearly 60% of the City's employment in this industry is located in the Bayfront. Nevertheless, these uses are slowly being replaced by office, retail, and hotel uses, as the land values have increased to the point where large-scale, land-intensive businesses can no longer compete with more people-intensive activities.

While the employment patterns in the Bayfront and East Emeryville are representative of the traditional, industrial image of the City, the employment pattern on the Peninsula is an illustration of more recent development trends in the City and in the East Bay. Although occupying only a small portion of the City's land area, the Peninsula accounts for approximately 20% of the businesses (132) and employment (2,215) in Emeryville. The numbers in Table III-11 reveal that manufacturing still dominates the employment character of the area; however, the jobs are more likely to be of an office nature rather than machine-intensive. Virtually all of the "manufacturing jobs" in this area are with Cutter Laboratories, a high-technology bio-engineering firm located in one of the area's office towers. With the number of high-rise towers in the area, it is not surprising that about 67% of the City's finance, insurance, and real estate jobs also are found on the Peninsula.

As the economic and employment base of Emeryville shifts from its historic industrial origins, the City will begin to accommodate more labor-intensive and service-oriented businesses at higher employment densities (higher numbers of employees per square foot). This shift will have major implications for the City's land use pattern and transportation system. Future employment trends projected by ABAG are shown in Table III-12. ABAG's figures show that manufacturing and wholesale will continue to account for the bulk of the employment base for the next 20 years. In fact, these sectors are expected to grow by about 10%. However, their importance relative to other sectors will diminish. Both retail and services are expected to grow by about 15% between 1985 and 2005. Given the projected change in the land use pattern,

particularly in the Bayfront, the proportion of job growth in the retail and service sectors is expected to be even greater than projected by ABAG. Similarly, the intensity of development and extent of reinvestment may not have been anticipated by ABAG, so that the total number of jobs would also be underestimated in the ABAG forecasts. How much more job growth Emeryville would experience over the next 20 years is largely dependent on the market and Bay Area economy. Since ABAG revises projections every two years, the City will have the opportunity to modify ABAG's forecasts in light of the City's comprehensive planning efforts.

Emeryville's Labor Force

Given the projected changes in the types of jobs likely to be provided in the City, it is worthwhile examining the job skills of Emeryville's resident workers. Such comparisons can highlight shortages in certain business sectors, or opportunities to target business development in particular sectors. When local jobs do not match resident labor skills, residents must look elsewhere for employment or possibly move.

The U.S. Census distinguishes between those who are in the labor force and those who are not. Those in the latter category include anyone who for a variety of reasons are not holding or seeking a job of any kind. Unemployed persons who are actively seeking employment are considered to be part of the labor force. About four out of every five persons over 16 years old in Emeryville are in the labor force; roughly 20% are not because they are elderly, institutionalized, discouraged, chronically unemployed, in school, etc. Of the 2,326 persons in the labor force in 1980, 7.2% were unemployed. This figure is skewed by the high employment rate (employed persons as a percent of those in the labor force) in the Bayfront and Peninsula, where it was 97.4%. In the North End, the unemployment rate was 11.3% and in the Triangle, it was 13.7%.

Table III-13 illustrates the types of jobs held by the 2,157 employed residents. As noted earlier, there are approximately six jobs for each resident worker in the City. This "job availability" varies considerably by industry. For every Emeryville resident employed in the manufacturing industry, there are about 19 manufacturing jobs in Emeryville, and for every resident employed in the wholesale industry, there are about 11 wholesale jobs. For the other industries, the number ranges from a low of two, for the finance, insurance, and real estate industry, to three, for the trucking/warehouse businesses. With the addition of the Pacific Park Plaza, Emery Glen, and Emery Bay Village residential developments since 1980, the number of residential workers in the City has increased. As of 1980, there was one resident worker per household. Assuming a similar ratio for the new households yields a 1985 estimate of resident workers of about 2,560. The 1980 estimate of 17% of the City's labor force being employed in Emeryville is expected to be lower since a large proportion of Pacific Park Plaza residents, which account for most of the 1980-1985 increase, are assumed to work elsewhere.

No conclusions can be drawn regarding whether the job skills required to perform the job "match" the skills held by Emeryville residents. For example, a firm classified as a manufacturing business may be a regional headquarters for that business, and employ only executive, administrative, and managerial personnel. A citywide survey will be needed for an assessment of job skills needed to work in Emeryville. The types of jobs held by Emeryville's labor force in 1980 is indicated in Table III-14. Tailoring an economic development effort to match those skills could help reduce unemployment and the need to commute to other communities to work.

TABLE III-12: EMPLOYMENT PROJECTIONS, 1985-2000

	<u>1985</u>	<u>%</u>	<u>1990</u>	<u>%</u>	<u>2000</u>	<u>%</u>	<u>2005</u>	<u>%</u>
Agriculture/Mining	80	0.6	60	0.4	40	0.2	30	0.2
Mfg/Wholesale	6,190	45.9	5,910	41.2	6,780	42.1	6,940	42.6
Retail	1,930	14.3	1,930	13.7	2,210	13.7	2,170	13.3
Services	2,330	17.3	2,390	17.0	2,720	16.9	2,830	17.4
Other	<u>3,030</u>	<u>22.4</u>	<u>3,840</u>	<u>27.2</u>	<u>4,330</u>	<u>26.9</u>	<u>4,330</u>	<u>26.6</u>
Total	13,500	100.0	14,100	100.0	16,100	100.0	16,300	100.0
County	549,700		612,400		724,200		778,900	
% of County		2.5%		2.3%		2.2%		2.1%

Source: ABAG, Projections - 85, July 1985.

* * * * *

TABLE III-13: EMPLOYED PERSONS 16 YEARS OR OLDER, BY INDUSTRY, 1980

<u>Industry</u>	<u>North End</u>	<u>Triangle</u>	<u>Bayfront, Peninsula</u>	<u>City Total</u>	<u>% of Total</u>
Agriculture	5	0	22	27	1.3
Construction	0	39	43	82	3.8
Manufacturing	82	162	58	302	14.0
Transportation	41	53	76	170	7.9
Communications	0	7	25	32	1.5
Wholesale	11	26	98	135	6.3
Retail	11	94	154	259	12.0
Finance/ins/real estate	23	13	206	242	11.2
Services	95	180	498	773	35.8
Public administration	<u>0</u>	<u>61</u>	<u>74</u>	<u>135</u>	<u>6.3</u>
Total	268	635	1,254	2,157	100.0%
% of Emeryville Residents Working in Emeryville	12%	20%	17%	17%	

Source: 1980 Census of Population and Housing, Summary Tape File 3A.

Not unexpectedly, a large proportion of the labor force living in the North End and in the Triangle were employed in what traditionally are considered "blue collar" jobs. In the Bayfront and Peninsula, a majority were employed in traditional "white collar" jobs. A very coarse indication of how well these skills are accommodated by Emeryville's economic base can be seen in the percentage of Emeryville job holders working in Emeryville. Table III-13 shows that in 1980 about 17% of Emeryville's labor force held a job in the City; the rest commuted to their jobs. The anticipated shift in the City's employment base towards retail and service would seem to correspond with the type of job skills currently held by a majority of the City's labor force. Nevertheless, the closing or relocation of some of the City's large manufacturing and trucking operations could affect a considerable number of residents.

Relationship between Emeryville's Land Use and Economic Conditions. A major goal of the City is to foster economic growth which will maintain the City's vitality, allow for funding of necessary infrastructure improvements like roads and sewers, and upgrade the City's image. Because the City is in such a favorable position in terms of its regional location and proximity to the Bay, there is enough interest in private redevelopment that Emeryville will almost certainly attain these goals in the long term. However, some negative side effects will result in the transition process.

The most significant side effects of reinvestment and new development activities, particularly in the Bayfront, will be the displacement of businesses that might prefer to stay in Emeryville if possible. While some of the bigger and older heavy manufacturing operations are no longer appropriate for as urban a location as Emeryville, some of the businesses that would be displaced would be compatible with the City's changing image.

Another possible problem would be development that is heavily slanted towards offices. If the vast majority of new development is devoted to this use, it could actually cause an economic decline because much of it could remain vacant for long periods of time. Also, from the City's standpoint, it should not become dependent on a single industry or group of industries that respond to the same business cycles; otherwise an economic downturn could create significant declines in tax revenues as well as create unemployment and potential massive economic dislocation.

TABLE III-14: JOB TYPES HELD BY EMERYVILLE RESIDENTS

<u>Job Type</u>	<u>Labor Force</u>			<u>City Total</u>	<u>% of Total</u>
	<u>North End</u>	<u>Triangle</u>	<u>Bayfront & Peninsula</u>		
Managerial/prof specialty	23	92	697	812	37.6
Technical/sales/admin support	95	164	440	699	32.4
Service	44	154	54	252	11.7
Farming/forestry/fishing	—	7	7	14	0.6
Precision prod/craft/repair	17	45	32	94	4.4
Operators/fabricators/labor	89	173	24	286	13.2
	268	635	1,254	2,157	100.0%

Source: 1980 Census of Population and Housing, Summary Tape File 3A.

In order to maintain economic diversity, Emeryville must concentrate on attracting a variety of businesses and helping to foster new start-up firms whenever possible. In the past, the City has been very fortunate in that it has attracted elements of the bio-technology industry, which is a growing field, and has also served as an incubator for new firms. The emphasis on small businesses also serves another purpose. Recent studies of communities as diverse as San Francisco, Seattle, Denver, Houston, and St. Petersburg have shown that the greatest gains in new employment are from younger, smaller firms. The study of different job sectors and firm sizes in San Francisco revealed that net job creation occurred only with firms with fewer than 99 employees, and that most of the growth was accounted for by firms with fewer than 19 employees and less than five years old. Accordingly, small businesses appear to be a desirable way not only of encouraging economic diversity but also of promoting job growth.

Objectives

- A. Provide adequate retail and service activities to meet the needs of local residents and employees.
- B. Promote the City's central location and excellent regional access to attract new business development.
- C. Encourage new higher-intensity commercial and industrial activities in appropriate locations in the City.
- D. Maintain and promote land uses that improve the tax base.
- E. Promote economic activities that will increase the number of small manufacturing businesses in the area.
- F. Concentrate economic development activity on job retention and creation for Emeryville residents.

Policies

1. Higher-intensity commercial and industrial activities should be concentrated along the Powell Street corridor. Such activities include offices, research and development, and hotel uses. The majority of the new retail- and service-sector development, particularly if the businesses are region-serving, should be concentrated in the Peninsula and Bayfront areas.
2. Existing light industrial and wholesale businesses that are compatible with retail and service industries should be permitted to remain in the Bayfront area.
3. Businesses that are required to relocate from the Bayfront area as a result of public action should be given assistance in finding new locations within Emeryville. Priority should be given to accommodating these relocated businesses in the area north of 64th Street and south of Park Avenue, provided that they conform to policies in the Land Use and Community Design elements for these areas.

4. Industrial businesses in the residential Triangle area should be encouraged to relocate to sites in Emeryville suitable for their activities. The Special Industrial District zoning should be discontinued, and the existing uses in these districts should be made non-conforming.
5. The City should place a high priority on revitalizing the San Pablo Avenue commercial strip.
6. Localized convenience retail and service businesses should be permitted anywhere in the City, provided that they are designed and located to complement, and not to conflict with, adjoining uses. To avoid their proliferation and to maintain the character of the neighborhood or district, no more than one such business shall occupy an intersection location. Priority should be given to locations along the pedestrian and bicycle routes.
7. In order to reduce the City's unemployment rate, especially among the City's youth, the City should encourage businesses to adopt a "hire Emeryville" policy. The City shall investigate the feasibility of a local hire provision during the construction phase of development. To help coordinate these activities, the City should consider appointing a jobs/marketing/grantsman coordinator.
8. The City should consult with businesses to identify their required job skills so that potential job training programs can effectively satisfy the needs of the employers.
9. The City should encourage new industrial or regional retail activities to locate in the Southern Border through its redevelopment authority which enables the City to provide necessary public improvements and utilities.
10. The City should encourage new businesses that are more labor-intensive industries, as opposed to "heavy" industries that are associated with air and noise pollution.

Implementation

1. Undertake a business survey to identify enterprises that are interested in staying and/or expanding in Emeryville (City, Chamber of Commerce, Emeryville Industry Association). The survey should seek information on the characteristics that make Emeryville desirable and the type of job skills appropriate to the business. The City and the Emeryville Industry Association could use this information to attract appropriate businesses to Emeryville.
2. Serve as an information clearinghouse on funding programs for business relocation (City). Potential programs available to assist in economic development, expansion, and relocation are identified in Table III-15. In addition, the City could identify available expansion sites, facilitate marketing of firms scheduled for closure, assist in identifying sources of raw materials and technical assistance, etc. Encourage employee ownership to provide for business continuity when small-business owners retire or when profitable firms are divested by parent corporations, etc.

3. Investigate the feasibility of business "incubators" to create an environment conducive to new entrepreneurs (City, Chamber of Commerce, Emeryville Industry Association). Incubators are designed to assist new business start-ups with financing and with establishing sound business management practices. Typically found in old, restored buildings, they provide support services, facilities, access to capital, loan packaging, employee training, etc., to new start-up businesses who lease space in the building. "Seed funds" to develop business incubators come from a variety of sources, including the Economic Development Administration, Community Development Block Grants, industrial development bonds, direct State appropriations, financial institutions, and private investors. The City should also investigate the feasibility of setting up a revolving loan fund to provide seed money. As of April 1985, one business incubator was operational in Lancaster, California, with about a dozen more being implemented in communities such as Los Angeles, San Bernardino County, and Fresno. Of particular interest for Emeryville is the Mission Economic Development Association, a community-based non-profit organization in the low-income areas of San Francisco, which is working to retain blue-collar jobs and the special services of the printing industry within San Francisco.
4. Consider the use of tax-increment funds or, if available, industrial development bonds to assist new business start-ups (Redevelopment Agency). Industrial development bonds are tax-exempt revenue bonds issued by a public agency for the benefit of a private company. The benefit derives from the fact that public entities can obtain lower interest rates, thus saving the private business significant amounts in interest payments. The bonds are secured by the assets of the private company, and the debt service is paid from the funds of the company. Redevelopment agencies have the authority to issue commercial industrial development bonds. However, current federal tax policies could severely limit the application of industrial development bonds as a stimulation for private-sector investment. (As currently proposed, tax-exempt status would be denied if more than 1% of the bond proceeds were used directly or indirectly by a non-governmental entity.)

D. CIRCULATION

Introduction

The Circulation Element is an important component of the General Plan, and serves as a basic, general guide for the development and coordination of more detailed plans and programs to build and improve streets, intersections, freeway interchanges, transit services, and bicycle, pedestrian, and parking facilities. The discussion in this section complies with Section 65302(b) of the State Government Code.

Two fundamental objectives have been used to formulate the circulation proposals. First, the transportation system must provide for reasonable service to regional travel that goes to, from, and through the City, and provide for efficient, safe, convenient, and attractive circulation within the City. Second, the circulation system is designed to support the pattern of land uses called for in the General Plan. It does this by providing the access capacities needed to serve the development densities and types of uses allowed by the Plan in the various parts of the City, and by directing the major traffic flows into routes that serve the more intense land uses directly, and keeping that traffic away from residential neighborhoods.

TABLE III-15: FUNDING PROGRAMS FOR BUSINESS RELOCATION

<u>Project Type</u>	<u>Agency/Program</u>	<u>Purpose/ Eligible Projects</u>	<u>Priorities/ Selection Criteria</u>	<u>Funding Availability and Type</u>	<u>Potential Application to Emeryville</u>
1. LOAN GUARANTEES PROGRAMS					
a. 503 program	Small Business Administration	Guarantee a 40% second mortgage loan on new construction up to \$300,000.	Depends on circum- stances.	Funds are avail- able through a certified develop- ment corporation.	Could help under- write costs of developing space for businesses displaced by redevelopment.
b. 7A program	Small Business Administration	Guarantees up to \$500,000 in loans, pays for working capital and equipment.	Individual business must meet certain size and profitability criteria.	Limited funds available depend- ing on outcome of federal budget process.	Could help busi- nesses capitalize expansion in con- junction with moving.
c. 502 program	Small Business Administration	Loan guarantees for fixed assets. Loans at market rate but over a longer term than banks usually give; covers fixed assets.	Business must have 30% equity in the project being financed and must have cash flow sufficient to meet debt service.	Same as above.	Same as above.
2. LOAN PROGRAMS					
a. 503 program	Small Business Administration	Provides up to 40% of cost for fixed asset expansion at below market rate interest at 7 years rather than 3 year terms.	Company must invest 10% equity and get 50% financing from conven- tional lender. Business must have a net worth of less than \$6 million and profits of \$2 million or less.	Funds available mostly for healthy expanding businesses rather than more margi- nal operations.	Same as above.

FUNDING PROGRAMS FOR BUSINESS RELOCATION

<u>Project Type</u>	<u>Agency/Program</u>	<u>Purpose/ Eligible Projects</u>	<u>Priorities/ Selection Criteria</u>	<u>Funding Availability and Type</u>	<u>Potential Ap- plication to Emeryville</u>
3. SUBSIDIES					
a. Redevelopment agency relocation reimbursement as required by state law.	City redevelopment agency.	Pays for relocation of businesses displaced by condemnation in a redevelopment project area.	---	Redevelopment agency must pay for the following expenses: -- cartage charges for business, personal property, inventory, and fixtures; -- disconnection and reconnection of fixtures and equipment; -- search expenses connected with finding a new site; -- reprinting of materials made obsolete by move; -- notification of business customers; -- telephone installation charges; -- business license fees; and -- other expenses which are determined reasonable by agency.	Could help businesses relocate from Bayfront to other parts of the City.

Regional Access

Much of Emeryville's land area currently is occupied by low-density industries. With more effective utilization of the City's land areas through both new development and redevelopment at comparatively moderate densities, traffic volumes into and out of Emeryville would significantly increase compared to the traffic volumes generated by the City's existing land uses. Nevertheless, Emeryville's central location at the junction of the major East Bay freeway routes and its location near the east end of the Bay Bridge (see Figure II-1) make the City potentially one of the most accessible locations in the San Francisco Bay Area. The City's General Plan proposes attainment of the potential for freeway access by improving the limited interchange ramps and the inadequate street system.

Major freeway projects are being designed by Caltrans to add high-occupancy vehicle (HOV) roads and lanes along I-80 and I-580. The HOV roads are to bypass the toll plaza and connect directly to traffic lanes on the Bay Bridge. These projects were conceived at a time when Emeryville's land use was not expected to change much. As initially proposed, the freeway projects would not significantly improve Emeryville's regional accessibility. However, with some modifications, they could add to the City's future accessibility sufficiently to provide for the level of regional access that will be needed to serve the land uses and densities in this Plan.

Failure to achieve the necessary modifications could require a reduction in the permitted level of future development. However, approval by City Council of freeway agreements for the portions of the projects that connect to Emeryville streets is required before the projects can be completed. This affords the City opportunities to participate to some extent with Caltrans in planning some of the features of the projects that most directly affect Emeryville's future, including proposed new interchanges at Powell Street and Ashby Avenue. Other needed access improvements require cooperative planning with Oakland and Berkeley.

Trips generated by residential development in Emeryville would tend to be shorter than those generated in residential areas further from the center of the East Bay because of the closer proximity to employment center and entertainment activities. Trips generated by new employment in Emeryville would tend to be shorter than trips generated by new employment in San Francisco. In addition, Emeryville's location offers an excellent opportunity to serve a substantial portion of its external trips in HOVs and public transit, particularly by AC Transit. Therefore, development growth in Emeryville, if adequately served by proposed circulation improvements, could have less traffic impact and require less extensive highway improvements than similar new development in other locations.

Powell Street Interchange. The existing Powell Street interchange on I-80 is a diamond type with two signalized intersections at the ramp terminals on Powell Street—one intersection on the east side of the freeway overpass, and one on the west side. The frontage road along the west side of I-80 joins Powell Street in a third intersection immediately next to the ramp terminal intersection, and it also is controlled by signals. Because the three intersections are close together, the signals allow only short green intervals for travel through the intersections, so the traffic capacity is less than it would be if the frontage road intersection were moved farther west.

The City has been meeting and working with Caltrans representatives to modify the interchange design¹ to provide more capacity to handle anticipated future traffic volumes and to assure that prime waterfront land will not be used for interchange or frontage road reconstruction. Caltrans plans to use a single-lane entrance onto the freeway for southbound ramp traffic, and this may not be sufficient for the volume of traffic that could occur in the future. Caltrans has pointed out that it has funding for improvements to serve short-term traffic needs but not for the possible long-term traffic growth. It would be desirable, however, to make certain that the short-term construction will not prevent future changes or additions to the Powell Street interchange that may become necessary to serve future Emeryville traffic.

Ashby Avenue Interchange. The Ashby Avenue interchange on I-80 includes connections to Bay Street for northbound traffic leaving and entering the freeway, but there are no connections to or from Bay Street for southbound traffic. Caltrans proposes to rebuild the interchange in a later stage of the I-80 improvement project, and its reconstruction is a necessary part of building a proposed separate HOV road along the east side of I-80, which is the key element in the entire I-80 project. The Environmental Impact Statement for the project² prepared by Caltrans, explains that traffic northbound on I-80 in the p.m. peak will be slowed intentionally by a four-lane "bottleneck" at Ashby Avenue, and the HOV road will bypass the congestion point on a separate roadway. This treatment will hold the northbound evening peak period traffic congestion on the south side of Ashby, which will leave a free-flowing condition on the freeway north of Ashby for Berkeley traffic, but will tend to block the freeway in Emeryville and prevent Emeryville traffic from entering the freeway northbound.

Such a plan would be severely detrimental to Emeryville unless Emeryville is provided a better connection between Bay Street and the Ashby Avenue interchange. The interchange is located on the boundary line between Emeryville and Berkeley, and the adoption of a particular interchange design will require agreement of all three parties: Caltrans, Emeryville, and Berkeley.

¹The Caltrans I-80 improvement project initially proposed to convert the existing interchange into a "buttonhook" type, removing the southbound on- and off-ramps from their existing position at Powell Street and connecting them instead to the frontage road. The ramps on the east side of the freeway would remain where they are. The Caltrans plan also would remove the existing ramp for traffic turning right from Powell Street to go south on I-80. Caltrans' reason for these modifications is to make more room on the freeway in order to install an exclusive HOV lane along the right-hand edge of the freeway starting about 600 feet south of Powell Street and going to the Bay Bridge.

²U.S. Department of Transportation, Federal Highway Administration, and State of California Department of Transportation, Final Environmental Impact Statement, Operational Improvements to Routes I-80 and I180 in Alameda and Contra Costa Counties, February 1984. The interchange plan proposed by Caltrans removes the existing directional ramps and replaces them with "buttonhook" ramp connections to the frontage road on the west side of I-80, and a one-loop partial cloverleaf arrangement on the east side. The interchange plan includes a two-lane link between Bay Street and Ashby Avenue that would not have sufficient capacity for the Emeryville traffic that will be generated in the Bayfront.

HOV Road. Caltrans' initial plans for construction of a separate two-lane HOV road along the east side of I-80 called for the road to be elevated on structure for most of its length through Emeryville. An elevated structure would physically and visually obstruct opportunities to enhance public access to and enjoyment of the waterfront. The City has been meeting and working with Caltrans to bring the HOV road down to ground level on the north side of Powell Street as close to Powell Street as possible after the HOV road crosses over Powell. The possibility of placing a portion of the HOV road near ground level in the area south of Powell Street is being examined also. Construction of the HOV road will be closely tied to the Ashby Avenue interchange.

San Pablo Interchange. There are ramps to and from the east on I-580 that connect by way of 35th and 36th Streets to San Pablo Avenue in Oakland near the Emeryville boundary line. In addition, there are ramps to and from I-580 west toward the Bay Bridge that connect to San Pablo Avenue in Emeryville by way of MacArthur Boulevard. These two sets of ramps form a full interchange with I-580 at San Pablo Avenue and provide a third freeway access point for Emeryville traffic. The interchange is only partially effective now largely because of capacity limitations in the San Pablo-MacArthur intersection.

In order to reach a decision on how to improve traffic flow and safety in this area, it will be necessary to coordinate planning with Oakland, and that planning activity is a logical next step.

Objectives

- A. Improve traffic operation and increase the traffic capacity at the freeway interchanges for Emeryville traffic.
- B. Build the proposed HOV road at ground level in Emeryville for as much of its length as possible, and provide for future access by AC Transit buses within the Bayfront area.

Policies

1. The City should continue to work with Caltrans to achieve the City's requirements in the Powell Street interchange, and assist in the formation of an interchange improvement plan that will support Emeryville's General Plan.
2. The City should obtain assurances from Caltrans that the Powell Street interchange reconstruction will be designed in such a way that it will be physically feasible in the future to make three possible additions to the interchange if future traffic conditions make them necessary:
 - a second traffic lane for southbound traffic from the on-ramp at the freeway entrance;
 - a right-turn ramp from Powell Street west onto I-80 for traffic going to the Bay Bridge; and
 - a possible future relocation of the ramp terminal intersection to a position somewhat further west on Powell Street to increase the

distance for storage of waiting traffic between intersections and improvement of traffic operation through the signals.

3. The City should minimize the land area taken by the Powell Street interchange and frontage road and seek to keep the interchange close to Powell Street in order to reserve more of the prime waterfront land for future redevelopment.
4. The frontage road should be maintained as a local collector street in order to discourage its use by regional through-traffic and should be incorporated into future development and circulation plans on the Peninsula. To achieve this, the City should require a realignment of the frontage road and should work with developers on the Peninsula to integrate the frontage road into all plans for new development or expansion of existing development. The resulting design should support the orderly development of the area and increase the efficiency of the Powell Street interchange.
5. Although the Ashby interchange is scheduled as one of the last phases in Caltrans I-80 improvements program (1988-1990) the City should continue to work with Caltrans and Berkeley in order to reach agreement on interchange improvements at Ashby Avenue that will provide convenience and high-capacity access for future Emeryville traffic traveling between Bay Street and both directions on I-80 (see also "Intersection Improvement" policies).
6. As part of its effort to improve the Ashby Avenue interchange, the City should continue to work with Caltrans to bring the HOV road down to ground level where feasible, particularly in the area north of Powell Street, and a way should be found to keep open the possibility of allowing AC Transit buses to enter and leave the HOV road at 64th Street within the Bayfront area in order to serve future development more directly.
7. The City should begin to work jointly and coordinate further planning of intersection and interchange improvements along its southerly boundary with Oakland (see "Intersection Improvements" policies).

Local Access

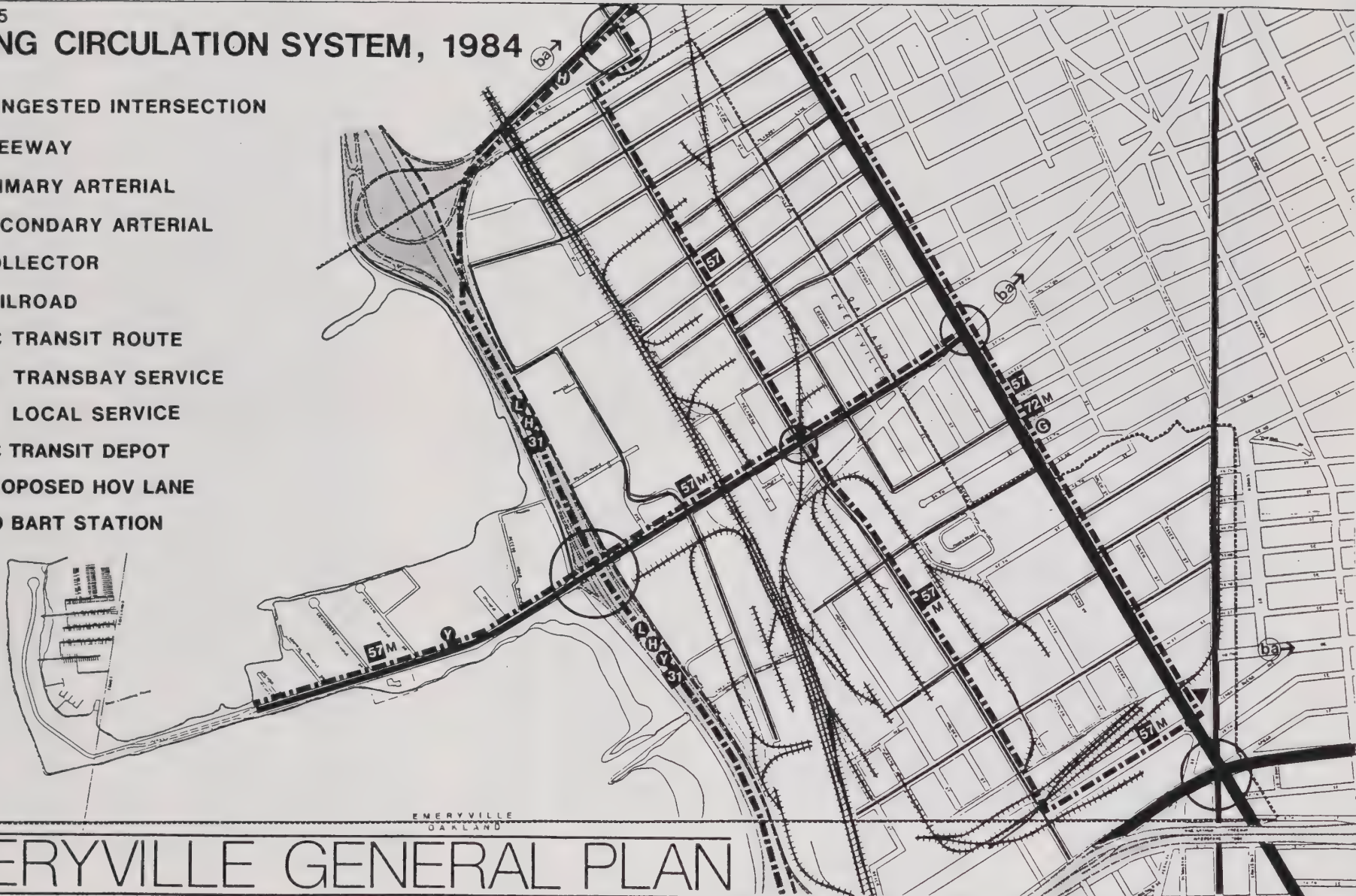
The local circulation system is illustrated in Figure III-5. It is characterized by a limited number of through streets and by many short street sections and cul-de-sacs. Only four-lane Powell Street in the east-west direction and two-lane Hollis Street in the north-south direction offer direct routes across the City. Other principal traffic-carrying streets such as San Pablo Avenue and Ashby Avenue are also in Oakland and Berkeley. The existing street system needs improvement, and Emeryville's small size makes it possible for the City to provide reasonable and effective alternatives to automobile travel for short, local trips within the City, including major bicycle and pedestrian corridors. The existing bus service is provided by AC Transit. There will be opportunities for improvements to transit service in connection with the street plans and Caltrans projects.

Traffic volumes on the major streets have been estimated using existing counts from Emeryville, Berkeley, Oakland, and Caltrans, as well as previous studies by others. Because traffic counts have not been performed as part of the General Plan, care should be exercised in using the numbers shown in Figure III-6. At best, the figure offers insight into the travel patterns of motorists and the relative use of Emeryville's streets.

Figure III-5

EXISTING CIRCULATION SYSTEM, 1984

- CONGESTED INTERSECTION
- ▬ FREEWAY
- ▬ PRIMARY ARTERIAL
- ▬ SECONDARY ARTERIAL
- ▬ COLLECTOR
- ▬ RAILROAD
- ▬ AC TRANSIT ROUTE
- Ⓜ TRANSBAY SERVICE
- 57 LOCAL SERVICE
- ▼ AC TRANSIT DEPOT
- ▬ PROPOSED HOV LANE
- ba→ TO BART STATION



EMERYVILLE GENERAL PLAN

SEDWAY COOKE ASSOCIATES

Urban and Environmental Planners and Designers

scale in feet 0 200 400 600 800 1000 2000

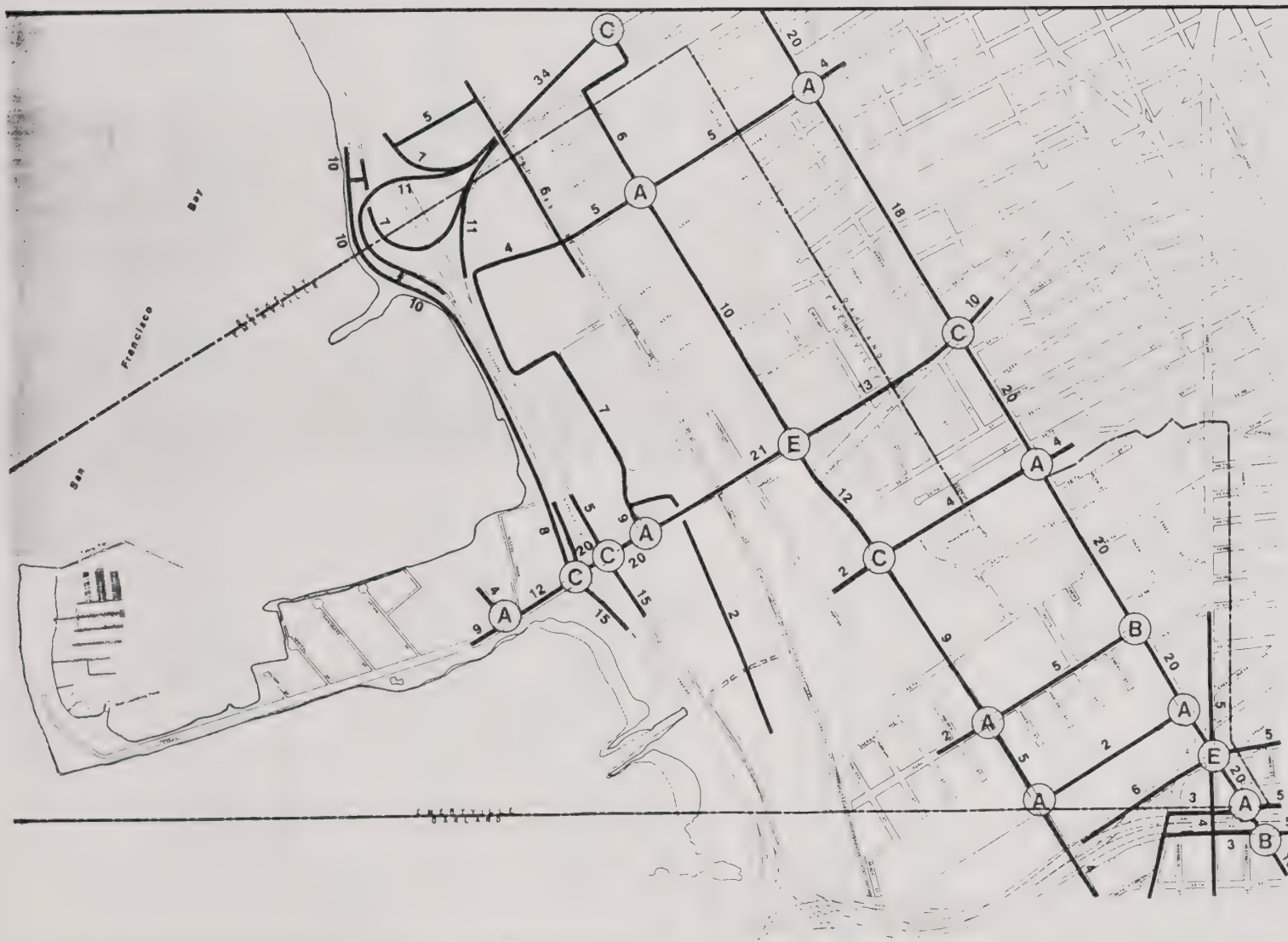


FIGURE III-6
EXISTING TRAFFIC
CONDITIONS

5
ESTIMATED
AVERAGE DAILY TRAFFIC (000s)

A
INTERSECTION LEVELS OF SERVICE
(p.m. peak)



EMERYVILLE
GENERAL PLAN
SEDWAY COOKE ASSOCIATES

Two features of the local street system merit some consideration. First, one should examine how well the street system functions. The ratio of vehicles traveling during the p.m. peak, when travel demand is greatest, to the capacity of the roadway provides such a measure. Referred to as the volume-to-capacity (V/C) ratio, this figure is measured at the intersection and suggests a level of service (LOS). The closer the ratio is to 1.00, the closer travel demand is to utilizing fully the available capacity. To simplify the presentation of level of service ratios, a letter rating scheme is used. LOS "A" indicates the V/C ratio is between 0.00 and 0.60, and traffic moves quite freely. Approaching greater levels of congestion and conditions of stop-and-go traffic are LOS "B" (0.61-0.70), LOS "C" (0.71-0.80), LOS "D" (0.81-0.90), LOS "E" (0.91-1.00), and LOS "F" (greater than 1.00). Figure III-6 shows the estimated intersection levels of service. In urban settings, LOS up to and including "D" are generally considered acceptable. Two intersections (Powell at Hollis and San Pablo at MacArthur) are at capacity (LOS "E"). The intersections along Powell Street between the frontage road and Christie are shown as operating at adequate levels of service (because the traffic entering the intersections theoretically do not fully use the intersections' capacity). In practice, however, these intersections function at LOS "D" or "E," because traffic at the freeway on-ramps back-up along Powell Street and hamper movement there. Similarly, truck traffic and turning movements may cause traffic delays, even though the V/C might not suggest congested conditions.

The second feature worth attention is safety. With many discontinuous streets, orientation is a problem for motorists. The number of streets merging around San Pablo, MacArthur, and Adeline is a prime example. It is not surprising that this area has one of the highest accident rates in the City. Safety is also a serious issue in areas where pedestrian activity is heavy. In the Triangle, east-west streets are inappropriately used as truck routes, and use of these residential streets by such traffic raises the risk of accidents.

Objectives

- C. Develop a more complete and useful system of streets within the City.
- D. Increase the capacity and efficiency of all street intersections in Emeryville that have a critical effect on the ability of the street system to serve planned future development in Emeryville.
- E. Achieve appropriate cooperation with Oakland and Berkeley on possible or required improvements to intersections outside Emeryville that have an important effect on Emeryville traffic conditions.

Policies

Street Improvements

- I. The City should establish a street improvement program, including specifications and priorities in accordance with the Circulation Plan (see Figure III-7), and coordinate the improvements with development projects as opportunities occur for funding the projects and acquiring rights-of-way.

2. The City should initiate cooperative planning with Oakland and Berkeley to plan jointly the street improvements that affect both Emeryville and the adjacent city.
3. The City shall establish the following street system as a means of providing adequate access to the adjoining uses and to direct traffic along proper routes. Figure III-7 shows the locations of City arterials, collectors, and local streets, and the number of lanes required to serve future travel demands.

City Arterial Streets. City arterial streets are intended to provide most of the City's required internal traffic capacity, carry the heaviest traffic volumes, and provide the most direct routes between internal and external places. Five arterial streets exist in Emeryville: Powell, Hollis, Park, 65th, and Adeline. The City should provide for three additional ones: Bay, Yerba Buena, and Christie, and improve connections along the arterials to form a more complete and useful system of major streets within the City. Significant arterial street improvements proposed are:

- an overpass over the railroad at the south end of Bay Street;
- continuation of Bay Street under Powell;
- connection of Bay Street to Ashby;
- crossing of Powell Street by Christie;
- improvement/extension of Yerba Buena across San Pablo to Adeline and 40th; and
- inclusion of a one-way loop in Hollis Street near Ashby to improve vehicular circulation and safety.

Collector Streets. This type of street would provide arterial access to residential neighborhoods and other development areas, but protect those areas from heavier through-traffic. City collector streets in the Circulation Plan are shown in Figure III-7. The most significant collector street improvements include the completion of Doyle Street from 65th Street to Park Street, the inclusion of collectors in the Bayfront area both north and south of Powell Street, and retention of the frontage road from Ashby Avenue to Powell Street.

Local Streets. Local streets are intended to provide access only for the areas immediately adjacent to them and are planned to be free from use by through-traffic. Local streets in the Circulation Plan are also shown in Figure III-7. The local streets are integral with the development areas they serve. Local streets generally connect to other local streets or to collectors. Many are shown in Figure III-7 as ending in a small "T" or an arrow point. The "T" indicates that through-traffic is not to be encouraged past those points, and may be positively discouraged by some means such as a narrow roadway, a change in paving, an alignment change, or even a dead end or cul-de-sac. The arrow points indicate a continuation of the local street into another jurisdiction outside the City of Emeryville, or an alignment that is to be determined.

4. As a general guideline, the City should seek compliance with the curb-to-curb widths shown in Table III-16. Actual widths may vary on specific street segments because of special local conditions.

Intersection Improvements

5. The City should initiate a serious effort to improve the existing intersections that have an important future role in the street plan: Powell and Hollis, Powell and Christie, Powell at the I-80 interchange ramps, Bay at the Ashby Avenue interchange, Bay and 65th, San Pablo and MacArthur, and San Pablo and Yerba Buena.

Powell/Hollis Intersection. The intersection of Powell Street at Hollis Street is one of the most critical intersections in the Circulation Plan. If Hollis is to work satisfactorily as a two-way arterial street, so that Doyle Street can serve as a two-way residential collector, the capacity of Hollis Street and its intersection with Powell Street must be increased. In order to provide sufficient capacity, all four of its approaches probably will have to be widened. The south approach from Hollis will require, for northbound traffic only, two through lanes and two left-turn lanes. The north approach will require two through lanes, two left-turn lanes, and a separate right-turn lane for southbound traffic. The Powell Street approaches will require two through lanes, one left-turn lane, and two right-turn lanes for eastbound traffic from the west; and two through lanes, a left-turn lane, and a separate right-turn lane for westbound traffic from the east.

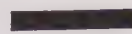
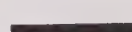
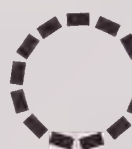
When trains pass through the intersection, they cause a loss of green signal time for waiting traffic. The capacity taken up by railroad use of the intersection could become critical in the future. It would be desirable to remove the tracks altogether, or move them to a less critical crossing.

Powell/Christie Intersection. The intersection of Powell Street and Christie Street will be the principal point of access between the Bayfront area and the Powell Street interchange. The existing interchange operates primarily as a three-approach, or T-type, intersection, although it has an additional one-way connection along Old Powell Street to Shellmound Street. The Circulation Plan changes the intersection to a full four-way intersection with through movements and left turns permitted from all four approaches. Widening will be required on all three of the existing approaches. The existing west approach on Powell Street has enough right-of-way to accommodate the widening that will be needed. The east approach on Powell Street will require some widening on the south side of the existing viaduct before it goes over the railroad. The widening will use a portion of the existing Old Powell Street right-of-way. Christie Street will require two lanes for traffic approaching the intersection from both north and south.

Powell/I-80 Ramp Intersections. The two existing intersections on Powell Street at the I-80 interchange ramps are less efficient than they could be because they are too close together. The condition is made worse by a third intersection, with the frontage road, which also is close. As part of Caltrans' plan for reconstruction of the interchange, it would be desirable to separate the two intersections with the I-80 ramps by a greater distance (approximately double the existing distance), and move the frontage road intersection even further west on Powell Street.

FIGURE III-7
CIRCULATION PLAN:
ROADWAYS



-  FREEWAY
-  REGIONAL ARTERIAL
-  CITY ARTERIAL
-  CITY COLLECTOR STREET
-  CITY LOCAL STREET
-  FREEWAY INTERCHANGE
(SEE TEXT FOR RECOMMENDATIONS)
-  NUMBER OF TRAFFIC LANES
-  KEY INTERSECTIONS
(SEE TEXT FOR RECOMMENDATIONS)

0 200 400 800 

**EMERYVILLE
GENERAL PLAN**

SEDWAY COOKE ASSOCIATES

TABLE III-16: TYPICAL CURB-TO-CURB WIDTHS

<u>Street Type and Lanes Required</u>	<u>Curb-to-Curb Widths (feet)</u>		
	<u>No Parking</u>	<u>Parking One Side</u>	<u>Parking Both Sides</u>
<u>Arterials (two-way streets)</u>			
2 lanes with two-way left-turn lane	46	56	66
4 lanes with two-way left-turn lane	70	80	90
2 lanes with normal left-turn lane	40	50	60
4 lanes with normal left-turn lane	64	74	84
6 lanes with normal left-turn lane	88	98	108
<u>Arterials (one-way streets)</u>			
2 lanes	32	38	48
3 lanes	38	48	58
<u>Collectors (two-way streets)</u>			
2 lanes with normal left-turn lane	34	42	50
4 lanes with normal left-turn lane	58	66	74
<u>Local (two-way streets)</u>			
2 lanes	24	32	40

Note: Widths may vary significantly for specific segments to fit local conditions.

Bay/Ashby Intersection. The intersection that connects Bay Boulevard to the Ashby Avenue interchange will be another critical point of access for the Bayfront area. The Caltrans plan for the interchange shows Bay Boulevard as a two-lane street, but this Plan will require at least a three-lane approach to the intersection and two lanes in the opposite direction, or five lanes instead of two. The City should consider two possibilities. One is to connect a five-lane Bay Boulevard to Ashby Avenue just east of the interchange, which would place the intersection within the Berkeley city limits. The other is to connect Bay Boulevard directly to a set of interchange ramps at a location slightly south of Ashby Avenue and within the City of Emeryville. Either option could work satisfactorily, and the City should pursue the options with Caltrans and Berkeley.

Bay/65th Intersection. The intersection of 65th Street and Bay Boulevard includes the only main-line, at-grade railroad crossing in the Emeryville General Plan, and the intersection warrants special attention for that reason. When traffic is stopped on 65th Street for a passing train, it is important that 65th Street be cleared safely of vehicles before the train arrives at the crossing. It is important also that Bay Boulevard traffic be able to move freely while 65th Street is stopped. These requirements can be accomplished by:

- keeping Bay Boulevard as close as possible to the railroad tracks, so that 65th Street traffic from the east can be stopped back of the tracks and still be controlled by the intersection signals (railroad crossing signals and arms would be used, also);
- timing the signals to clear 65th Street before closing it for the train to cross; and
- providing an ample length of left-turn storage lane on Bay Boulevard north of the intersection so vehicles waiting to turn left into 65th Street while a train is passing will not block a through lane on Bay Boulevard.

San Pablo/MacArthur Intersection. The existing intersection of San Pablo Avenue and MacArthur Boulevard is inefficient because it has six approaches and is spread out over a large area. The combination of these two factors results in short signal phases, and long, unused clearance intervals, so that only a portion of the available signal time is actually used for moving traffic. The City should examine the following proposals for improving the intersection's capacity and efficiency:

- remove Adeline Street from the intersection in order to reduce the number of approaches and reduce the size of the intersection;
- further reduce the number of left turns in the intersection by prohibiting and re-routing some left-turn moves;
- increase the number of lanes on the intersection approaches;
- improve the route from Adeline to Hollis from the south;
- improve the connection from Adeline into Yerba Buena from the north; and
- add a connection from Yerba Buena to 35th Street near Magnolia and Peralta to bypass San Pablo.

San Pablo/Yerba Buena Intersection. Extending Yerba Buena Avenue directly north across San Pablo Avenue and into Adeline Street would provide more options for traffic going north on Yerba Buena and offer further relief for the San Pablo/MacArthur intersection. One of the critical features in maintaining adequate capacity through the intersections is to provide a sufficient number of lanes on San Pablo Avenue. Estimates indicate that the one-block segment of San Pablo between Yerba Buena and MacArthur Boulevard could require up to nine lanes, including left-turn lanes, or a street width of about 100-110 feet.

Seven lanes could be required in the block north of Yerba Buena Avenue, and in the three blocks south of MacArthur Boulevard.

6. The City shall coordinate with Oakland and Berkeley on plans for improvements to intersections outside Emeryville that will significantly affect traffic conditions in, and access to, Emeryville, and shall coordinate also on plans for improvements in Emeryville that will affect traffic conditions in, and access to, Oakland and Berkeley.

There are several intersections outside the Emeryville city limits that could significantly affect traffic conditions on the Emeryville street system. In Oakland, the intersections of 35th and 36th Streets at San Pablo Avenue, Adeline Street, Peralta Street, and Magnolia Street, and the possibilities for changing them, could determine the options available for improvement of the San Pablo/MacArthur intersection. The San Pablo/Stanford/Powell intersection also is in Oakland. It is not so critical for capacity, but since the Emeryville General Plan calls for changing the use of Stanford Avenue in Emeryville, it would be appropriate to coordinate with the City of Oakland on its intended use of Stanford Avenue from San Pablo Avenue to the Emeryville city limit.

Two intersections in Berkeley have significant effects on traffic flow in Emeryville: one is Ashby Avenue at Seventh Street, which is the principal access to Hollis Street on the north; the other is the intersection of San Pablo and Ashby. It would be desirable to coordinate with Berkeley on its future plans for these two intersections.

Parking

Off-street parking facilities will be needed to serve and support the development and redevelopment that is being planned. Also, the necessity of removing curb parking from some arterial streets will make it necessary to move more parking spaces into off-street facilities. Important aspects to be addressed in planning off-street parking are the quantity of parking spaces to provide, the ownership and management of the parking, and the location and design of facilities.

The quantity of parking spaces should be sufficient for the anticipated demand, but not excessive or wasteful of space. In order to achieve the appropriate density of development and make the best use of the land, it is necessary to reach an appropriate balance between the convenience of a maximum number of parking spaces, and the economy of a minimum number. Larger parking facilities that serve a variety of users are more efficient and economical than several smaller facilities that serve individual buildings, because the spaces in the larger facility can be shared by drivers who park at different times. The number of spaces needed can be reduced by increasing the average number of persons traveling in each car, and by changing automobile drivers to other modes of travel. Both are goals of transportation system management (TSM) programs.

In addition to curb parking controls and prohibitions that may be required at various locations throughout the City to solve local problems, some street segments in the Circulation Plan will require complete prohibition of curb parking. The purpose of removing curb parking is to maximize the capacity for moving traffic in the limited available street space and to move the parking into off-street facilities and minimize the right-of-way width.

Objectives

- F. Use curb parking controls to maximize the traffic capacity of arterial street segments that have limited street widths.
- G. Achieve convenient and efficient off-street parking that will effectively meet the parking demand and maximize the best use of individual development sites.

Policies

- 1. The City shall establish standards and plans for location and design control of off-street parking facilities. Standards and guidelines for the location and design of off-street parking facilities should have an important place in the development plans for specific areas. The location of vehicular entrances and access from parking facilities to pedestrian paths are important considerations. Possibilities of staging the construction of parking facilities, and of adding future building space over, or next to, a parking structure are also important to consider in the initial planning.
- 2. The City shall establish a range of off-street parking space requirements for various types of uses, and a basis for determining how a range will be applied to a particular development project. Proposed ranges for parking space requirements are listed in Table III-17.
- 3. The City shall consider the establishment of parking districts for specific development areas. Off-street parking facilities can be owned and managed privately or by a public agency. It is not uncommon to form parking districts in which individual properties contribute to the district. The district then provides and runs the parking facilities. The advantages of a parking district are that it is better able to encourage and take advantage of shared parking, and it can make use of the City's advantages in making financial arrangements and acquiring the land for parking sites.

TABLE III-17: OFF-STREET PARKING REQUIREMENTS

<u>Type of Use</u>	<u>Number of Parking Spaces</u>
Office	2 to 4 spaces per 1,000 square feet (gross)
Regional Retail	4 to 5 spaces per 1,000 square feet (gross)
Local Retail	3 to 4 spaces per 1,000 square feet (gross)
Restaurants	8 to 10 spaces per 1,000 square feet (gross)
Industrial, wholesale	1/2 to 3 spaces per 1,000 square feet (gross)
Hotel	1 space per room
Residential	1 to 2 spaces per dwelling unit
Theater	1/4 to 1/3 per seat

4. The City shall examine different strategies for implementing TSM programs. Private TSM programs could be required for individual development projects, or the City could set up a centralized management program to which building owners and developers could subscribe. Transportation management would include activities such as car-pooling, van-pooling, provision of bicycle support facilities, and incentives to use public transit. For development projects that participate in management programs to reduce the quantity of parking spaces needed, there could be bonuses to allow more floor area of building space on that site, and the City's parking space standards for new development could be stated as a range, with the lower end of the range offered to those employing more effective management programs. (See additional discussion under "Transporation Systems Management" policies.)
5. All curb parking shall be prohibited on Powell Street between Hollis Street and the west side of the I-80 interchange, on Hollis Street between Yerba Buena Avenue and 65th Street, on San Pablo Avenue between 36th Street and Park Avenue, and on the entire length of Bay Boulevard.
6. If on-street parking shortages are identified as a problem, the City could conduct a study of its local street to identify possible areas where "nose-in" parking could be permitted to increase on-street parking spaces.

Transit

Emeryville is served by AC Transit. The bus routes are illustrated on Figure III-5. Four of the routes offer commute service to San Francisco. Local service is provided by the "57M" serving the Peninsula, the Bayfront, Central Emeryville, and the Southern Border areas; the "57" serving the North End and the Triangle; and the "72" serving the San Pablo Avenue corridor. There will be opportunities to expand the existing bus service in Emeryville and increase the percentage of travel by public transit. Increased transit use will help to reduce traffic volumes at critical places on streets and interchange ramps. The Circulation Plan offers two special opportunities for increasing transit service. One is to add a new bus route through the Bayfront area. The other is to provide access to the planned HOV road at an appropriate location within the Bayfront area.

Objective

- H. Expand transit services and increase the percentage use of public transit in Emeryville.

Policies

- I. The City should work with AC Transit to establish a new bus route through the Bayfront area. The route would be on Bay Boulevard north of 64th Street and south of 55th Street. Between 55th and 64th Streets, it would have the options of using Christie: (1) between 55th and 64th and crossing Powell Street at grade; or (2) between 59th and 64th and crossing under Powell Street on Bay Boulevard. Transit stops would be located at 45th, 55th, and 64th Streets, on Christie, and at some convenient location for transfers with Powell Street routes. Outside the Bayfront area, the new bus route would reach Bay Boulevard by way of Yerba Buena on the south and 65th Street on the north.

2. The City should work with Caltrans in planning the HOV road so that it will be possible in the future to provide HOV road access for buses only at 64th Street in the Bayfront area. The HOV road proposed by Caltrans is to carry buses and other high-occupancy vehicles in the peak direction to and from the Bay Bridge during the morning and evening peak periods, and bypass traffic congestion at the east end of the Bay Bridge. Access for buses only could be provided at 64th Street in the Bayfront area. If the grade of the HOV road is designed to meet the grade of 64th Street, and a sufficient width of right-of-way is provided for an acceleration or deceleration lane on the HOV road south of 64th Street, the special access opening for buses could be built at a time in the future when the development in the Bayfront area warrants it.

Pedestrian and Bicycle System

Emeryville is contained within a relatively small area, but the distances between various places within the City are not always short because the City is divided into relatively isolated parts by a main-line railway corridor, a freeway, and other rail lines and traffic arteries. Developing a network of attractive pedestrian and bicycle routes to overcome the barriers and link the major features in the various parts of the City deserves a high priority in the implementation of the General Plan, and could be considered the most important element of the Plan for bringing the parts of the City together into a cohesive whole.

Objective

1. Establish a complete and attractive network of interconnected pedestrian and bicycle routes that will serve all parts of the City; provide convenient access to the major features, attractions, and activities of the City; and reduce dependence on automobiles.

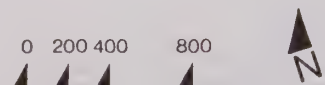
Policies

1. The City should develop a comprehensive pedestrian network to link the City's activity centers, public facilities, and open space areas (see Figure III-8). The network should offer a visually enjoyable experience, as well as a viable alternative to the automobile.
2. The pedestrian and bicycle systems should be designed to minimize potential safety hazards from automobiles. Pedestrian routes in particular should avoid heavily trafficked roads, such as the main City arterials. Separated grade crossing should be used to bridge dangerous thoroughfares or rail lines. The Circulation Plan for Pedestrian and Bicycle Corridors (see Figure III-8) identifies locations where such structures are proposed.
3. The pedestrian and bicycle systems, while serving local Emeryville travel needs, should be integrated into a regional network in order to function as a viable alternative to the automobile. Figure III-8 indicates arrowheads at the end of pathways that must be coordinated with Oakland and Berkeley.

FIGURE III-8
CIRCULATION PLAN:
PEDESTRIAN AND BICYCLE
CORRIDOR



- MAJOR PEDESTRIAN CORRIDORS
- MAJOR BICYCLE CORRIDORS
- [P] MAJOR PUBLIC FACILITY
- (=) OVERPASS OVER RAIL OR FREEWAY
- (=) RAIL CROSSING AT GRADE



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4. Major elements of the proposed pedestrian and bicycle system that the City should develop include east-west corridors parallel to Powell Street and north-south corridors in the Bayfront area and East Emeryville as described below. Major pedestrian and bicycle corridors should be closely integrated into the open space/recreation network (see additional policies in the Community Design and Landscaping Elements).
 - An east-west corridor should connect the housing and hotel facilities on the Peninsula with the City Center along Christie in the Bayfront and the Westinghouse complex in East Emeryville.
 - A second east-west corridor should connect Temescal Park in the Bayfront with Stanford Avenue in East Emeryville and the housing area in the Triangle.
 - A north-south corridor in the Bayfront is proposed to connect the Emeryville Town Center with Aquatic Park in Berkeley, the proposed Temescal Park, and the southern crossing (connection of Bay Boulevard with Yerba Buena) in Oakland.
 - A second north-south corridor is proposed along Doyle Street connecting all the housing areas of East Emeryville with the City's public facilities and work locations.

Transportation Systems Management

Transportation Systems Management ("TSM") programs increase the efficiency of a community's transportation network by reducing the number of vehicles, increasing the capacity of the roads, and converting people from the single-occupant automobile to other commute modes. Such programs are used both in the Bay Area and around the United States as a means of mitigating the traffic, energy, and air quality impacts of large-scale development. TSM can also be used as a regulatory tool, ensuring that development of a given intensity will not overburden a community's transportation system. A combination of incentives and disincentives are usually used to achieve TSM program goals.

Objective

- J. Promote a variety of techniques to utilize the existing transportation network better and to reduce single-occupant automobile use during peak hours.

Policy

- I. The City should develop a comprehensive TSM program. The TSM Program should be composed of the following elements:
 - **Capacity-Building Measures.** Low-cost capital improvements to the current road network which increase the capacity of the system. Such measures include:

- synchronization of traffic signals
 - restrictions on driveway spacing
 - provision of off-street bus stops and turn-outs
 - selective truck routing
 - restriction of turning movements
 - signing and marking revisions.
- **Trip Reduction Measures.** Steps which decrease the quantity of traffic generated by a given project, accomplished by reducing single and double occupant vehicle use. The following steps should be considered:
 - enactment of ridesharing/carpooling/vanpooling programs
 - promotion of staggered work hours/flextime/compressed work week
 - establishment of preferential parking stalls for carpools and vanpools
 - mixing of land uses to reduce trip generation
 - construction of sidewalks, bike lanes and pedestrian walkways
 - mandatory construction of showers and bicycle storage facilities
 - bonuses for providing housing in conjunction with employment centers
 - promotion of employer-paid transit subsidies.
 - **Parking Management.** Reduction in parking requirements to encourage the trip reduction measures outlined above.
 - **Public Transit Provisions.** Improvement of transit service within the City to increase transit usage and reduce traffic; improvement of transit facilities, including passenger shelters; and provision of transit operating or pass subsidies.

Implementation

1. Investigate strategies used by other communities to implement a TSM program (City). The TSM Program for Emeryville can either be applied only to those developers who seek to build at a high intensity approaching the maximum floor area ratio (FAR), or to all developers of projects of a certain size within the city. In the former case, the developer would enact an individual transportation management (TM) program as a trade-off for more intense development. Each project owner would be responsible for carrying out and coordinating his or her own program. The owner would be fully responsible for the program's financial support and management. Operating costs would vary greatly depending on the extent to which vanpool and subscription bus service was used. City staff would be responsible for monitoring the individual programs. Compliance with the trip reduction programs may be enforced in a number of ways. A TSM ordinance may be prepared which specifies the measures to be taken and the goals to be reached. Fines may be placed on owners who do not take certain measures to reduce trip generation. Use of more severe penalties, such as denial of occupancy permits for failure to meet trip reduction goals, may also be explored. Past experience has shown that mandatory TSM participation is far easier to enforce than mandatory attainment of trip reduction goals.

The other approach, participation in a municipally-coordinated, areawide program, could be required of all new developments or establishments meeting certain size criteria. This type of program requires good program management and wide participation in order to be successful. An areawide Transportation

develop, implement, manage, and market an overall program for trip reduction. A TMO coordinator would work with employers to obtain commute data, establish ridesharing, flextime, and transit subsidy programs, and establish trip reduction goals. The coordinator would implement an areawide carpool matching program, and could implement an areawide vanpool program. The coordinator would also keep data on parking management, working with developers to minimize parking where feasible and provide alternatives to the single-occupant vehicle.

Membership and financial support for the TMO would have two categories: mandatory and voluntary. The distinction could be made along a number of lines but would most likely be based on the size of the project or the requested increase over the standard FAR. Financial support would probably be calculated on a square footage basis. Annual costs might be passed on to the tenant as part of the rent. A one-time fee would probably be incurred by the owner at the time of the project or permit approval to cover TMO expenses until the building is occupied.

2. Continue discussions and negotiations with Caltrans to obtain freeway and interchange improvements beneficial to the City (City). All freeway agreements with Caltrans should be carefully reviewed to ensure that they can accommodate the development potential projected by the General Plan.
3. Coordinate with Berkeley and Oakland on roadway improvements that link their streets with those in Emeryville (City). The City staff should begin discussions with the staffs of each of these cities to discuss the Bay Street extension over the railroad tracks at the south end of the City, the San Pablo/MacArthur intersection, and the Hollis/Ashby intersection. Given the development potential of the Bayfront area, some means of access other than via Powell Street is critical. If the City cannot reach agreement with Oakland regarding the Bay Street extension, which would cross the railroad tracks in Oakland, the City should evaluate other possible alignments to provide this southerly access to the Bayfront.
4. Incorporate the street, parking, and pedestrian and bicycle way standards and guidelines into the review of development projects (City Department of Planning and Public Works). Pursuant to the Subdivision Map Act, the City can require of subdividers dedication of real property for roadways (Government Code Section 66475), bicycle paths (Section 66475.1), and local transit facilities (Section 66475.2). As a condition of approval of a final map or as a condition of issuing a building permit, the City can require payment of a fee to defray the cost of constructing bridges over railways and freeways, or constructing major thoroughfares (Section 66484). Prior to requiring such payments, the City would have to pass an ordinance that refers to this Element of the Plan and identifies those provisions which indicate such facilities are necessary. The ordinance must provide for public hearings for each area benefited to discuss the area boundaries, estimated costs for improvements, and method of apportionment.
5. Consider formation of assessment districts. A special assessment is a levy placed on a property to finance improvements that specifically benefit that property. Special assessments can be apportioned upon any basis which will reasonably measure benefits. These assessments are typically paid by property owners at the same time property taxes are paid. Special assessments are predominantly administered through the Improvement Act of 1911 assessment

proceedings, Improvement Act of 1911 bonds, the Municipal Improvement Act of 1913, and the Improvement Bond Act of 1915. An additional enabling act is the Landscape and Lighting Act of 1972.

An assessment district can be initiated either by the public agency governing body or by landowner petition. Section 22593 of the Government Code provides for written protest by property owners of at least 50% of the assessable land area to halt the proceedings. The same section also permits the governing body to override the protest by a four-fifths vote, if the findings conclude that the improvement is required for the public health.

When an assessment district is created, improvements are authorized, and property owners are assessed to finance the entire cost of the improvements. For improvements whose costs exceed the amount that could be conveniently raised from a single assessment (one lump sum), bonds are issued, and assessments are levied and collected in installments to pay the bondholders. The 1911 and 1915 Acts provide the mechanisms to issue bonds.

Assessments are intended to equal the amount of benefit the assessed property receives from a given improvement. The burden of the total assessment is "spread" to the beneficiaries of the improvements. Improvements required to serve future residents, without providing any benefit to existing residents, would be spread to owners of undeveloped parcels only.

6. Include major street and intersection improvements in the City's Capital Improvements Program (City).
7. Actively encourage AC Transit to improve transit accessibility in Emeryville (City).

E. PUBLIC FACILITIES AND SERVICES

Introduction

The efficient and timely provision of public services and utilities is essential for the physical development and well-being of a community. Services such as fire protection, law enforcement, and parks contribute to an area's "quality of life" and sense of civic pride. Other facilities such as sewers, water supply systems, and gas pipelines can inhibit development if not provided. Because of the importance of these services, the State Government Code includes several references to ensure their consideration in the preparation of a general plan:

- Section 65302(a) requires preparation of a land use element that must address the proposed general distribution and general location and extent of the uses of land for . . . recreation . . . education, public buildings and grounds, solid and liquid waste disposal facilities, and other categories of public and private uses of land.
- Section 65302(b) requires preparation of a circulation element that should address the general location and extent of existing and proposed . . . local public utilities and facilities.

- Section 65302(d) requires preparation of a conservation element that may address flood control and prevention, and control and correction of the erosion of soils, beaches, and shores.
- Section 65302(e) requires preparation of an open space element that must plan for, among other things, outdoor recreation.
- Section 65302(g) requires preparation of a safety element that must address protection from fires and other hazards.

This section describes the various services in Emeryville and suggests how their future provision will affect development in the City. Further discussion of life safety is found in the Public Health and Safety component.

Public Facilities

The City's public facilities are illustrated on Figure III-9.

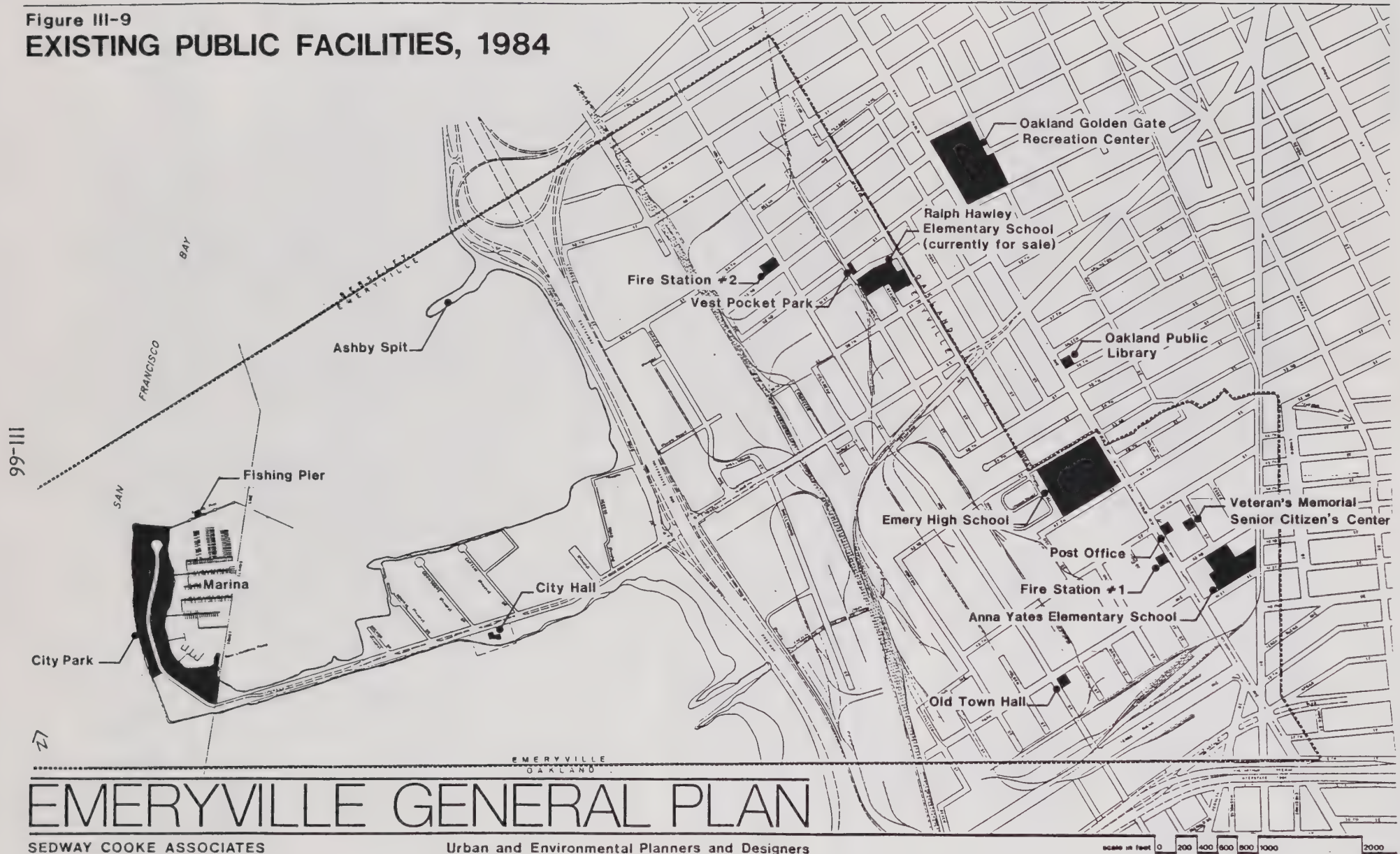
City Government Facilities. The City's governmental offices are currently located in two separate locations. The Old Town Hall is located in a light manufacturing district at 1333 Park Boulevard and houses the Redevelopment Agency, the Public Works Department, and the Housing Rehabilitation Department. The new City Hall (at 2449 Powell Street) is on the Peninsula, separated from much of the City except for the Watergate complex. This facility houses the City Council chambers, the Mayor's office, the administrative offices (e.g., the City Manager, City Clerk, City Attorney, Finance Director, etc.), and the police department. The City does not have a corporation yard or operate any public parking facilities.

Schools. The City is served by the Emery Unified School District, which operates two schools. All students of grades K-6 attend Anna Yates Elementary School at 41st and Adeline Streets. Current enrollment is 201 students. The roughly two-acre site has a maximum student capacity of approximately 275. High school students (grades 7-12) attend Emery High School at 1100-47th Street. Current enrollment is estimated at 249 students and maximum capacity is about 400. The teacher/student ratios at each school are at or better than the average State levels. The School District also owns another facility, the Ralph Hawley School, in the North End at 1275-61st Street. The District is currently leasing this facility to a private school.

This District has undergone a number of recent changes triggered by insufficient funds in past years. Formerly one of the top-financed districts in the state, the District has seen its teaching staff fall from 21 to 14 to its present level of eight. Concurrently, a number of classes and programs were reduced, and enrollment has been dropping. The District is now on a strict fiscal management program and is making major efforts to re-attract students. The school curriculum is being revamped and includes a variety of new programs and classes.

Given the District finances and the City's small student population, there are no plans to expand the existing school facilities. The possibility of such expansion would need to be considered if future development in Emeryville were to accommodate family households.

Figure III-9
EXISTING PUBLIC FACILITIES, 1984



EMERYVILLE GENERAL PLAN

SEDWAY COOKE ASSOCIATES

Urban and Environmental Planners and Designers

scale in feet 0 200 400 600 800 1000

2000

Recreation Facilities. Emeryville's public open space and outdoor recreation resources consist of a few parks and pedestrian walkways, schools, and some privately and publicly owned shorefront land. The existence of private facilities such as health clubs or tennis courts has not been documented below, since these facilities do not serve the entire City.

Parks. The City operates two recreational facilities. One is a 10,000-square-foot "vest-pocket park" at 62nd and Doyle Streets. It contains play equipment for young children but no open play area. The City's other facility is a landscaped picnic area at the tip of the Peninsula. The area includes the City's Marina which offers boat docks, fishing piers, and dining areas. This facility serves not only residents of Emeryville but also persons from the greater urban area. A pedestrian/bicycle path was constructed along the southern shoreline of the Peninsula in 1986, as required by the BCDC when the new City Hall was built.

Schools. Schools often represent the only open space or recreational facilities in Emeryville's older residential areas. Anna Yates School in the Triangle at 41st Street includes a small paved playground. The school buildings and playing fields of Emery High School occupy eight acres of land. The Ralph Hawley School site in the North End fills almost two acres of land. This property is currently leased by the School District to a private school.

Ashby Spit. The Ashby Spit is a narrow strip of land totaling about 3.5 acres. Although privately owned and undeveloped, the area has been used by people for sightseeing, fishing, clam digging, and jogging. The Spit offers a panoramic view of the Bay and opposite shorelines. A fence currently prevents unauthorized access.

North Frontage Road. Along the Frontage Road is a narrow strip of concrete debris and makeshift riprap often used by people who are fishing or sightseeing. This location also offers an exceptional view across the Bay.

East Bay Shoreline Park. For the past 20 years, citizens' groups in the East Bay have been working toward increasing access to the Bay. These efforts culminated in a specific proposal, prepared by the State Department of Parks and Recreation and the State Coastal Conservancy, for a park along the East Bay shoreline, which was presented to the California Parks and Recreation Commission in March 1980. The park would extend from the southern Contra Costa County line to the Oakland Bay Bridge toll plaza. Its major feature would be a bicycle/pedestrian pathway from one end to the other.¹ With passage of the California Parklands Act of 1980 (SB 624, Nejedly), which was Proposition I on the November 1980 ballot, the State Parks and Recreation Commission formally recommended in March 1981 that the East Bay shoreline proposal be given top funding priority.²

¹Ken Collier, Planning Division, California Department of Parks and Recreation, November 16, 1984.

²California Department of Parks and Recreation, East Bay Shoreline: Feasibility Study, December 1982, pp. 2, 7.

The Department of Parks and Recreation published a feasibility study which defined specific recommendations for the proposed park. Within Emeryville, the State recommends that a pathway be built along the North Frontage Road south to Powell Street. South of Powell Street, the State's proposals identify two alternatives: first, that the path continue through the Emeryville Crescent to the San Francisco-Oakland Bay Bridge toll plaza; and second, that the path follow alternative routes through Emeryville to Oakland.

The feasibility study also recommended the acquisition and development of the Ashby Spit (three acres) for a passive recreation area and 12-car parking area, the shoreline strip between the Spit and the Peninsula (four acres), and the Peninsula's southern shoreline for pedestrians and bicyclists. The study suggested that the Emeryville Crescent (500 acres in Emeryville and Oakland) should be acquired as part of the San Francisco Bay Wildlife Refuge System, with the U.S. Fish and Wildlife Service or the California Department of Fish and Game responsible for its management.¹ Controlled public access would be necessary to protect the fragile environment.

Recreation Planning. Planning for open space and outdoor recreation involves a number of factors: the needs and desires of the community, the availability of land, financing mechanisms, maintenance costs, accessibility and safety, to name a few. The City of Emeryville with a population of nearly 5,000, is equivalent to a good-sized neighborhood in other communities and would need a neighborhood park of 4-8 acres, according to national standards. However, Emeryville's population is not evenly distributed. Over half the population is located in the Watergate complex and the Pacific Park Plaza condominiums, both of which offer recreational facilities to residents. Peninsula residents also have good access to the shoreline and the City Marina. The balance of the population is concentrated along a band in the North End and in the Triangle, subareas which are separated by a heavily travelled street. These areas are served only by school facilities, to the extent they are accessible, and the vest-pocket park on Doyle Street. Residents of these neighborhoods include proportionally more families and elderly than either Watergate or Pacific Park Plaza. Their income levels and their access to transportation are also more limited than the newer residents. Accordingly, the recreational needs of East Emeryville are not being satisfied adequately. Moreover, the desire for more and better facilities was clearly expressed in a questionnaire distributed at a community meeting. The results of that questionnaire indicate that the shortage of outdoor and indoor recreational opportunities are among the mostly frequently perceived problems in Central Emeryville, the North End, and the Triangle.² Consequently, recreational opportunities must be considered in future land use decisions and within large-scale development projects.

Cultural and Social Facilities. The City's Senior Citizen Center in the Veterans' Memorial Building offers a variety of programs for anyone over 60 years old. Although it primarily serves Emeryville residents, the program is open to all senior citizens. Specific services offered by the center include physical fitness and health

¹California Department of Parks and Recreation, East Bay Shoreline: Feasibility Study, December 1982, p. 3.

²See Sedway Cooke Associates, Citywide Goals and Objectives, January 1985, for a Summary of the Responses to the Questionnaire.

classes, Medicare counseling, health examinations, hot meals, legal services, and social activities. The center also distributes taxi vouchers at a discount to help meet the transportation needs of the area's elderly. The primary funding source is the Older Americans Act (especially Titles 3 and 5). Other funding sources include federal revenue sharing, City general fund appropriations, and private donations.

The City's Child Care Program is funded by the State Department of Education and the City. It currently provides day care for children under five years old at the Ralph Hawley School site; however, given the uncertainty of the site's future, the program is in need of a permanent location. Because of this uncertainty, the program has not accepted new children, in spite of a waiting list of approximately 150. Fees for child care are based on the parents' income in accordance with a sliding scale established by the State.

The City does not have a public library or community center, although meeting areas are available at the high school and in a few of the newer residential complexes.

Public Safety

Fire Protection. The Emeryville Fire Department operates two fire stations. One is at 6303 Hollis Street, between 63rd and 64th Streets; the other is at 4331 San Pablo Avenue, between Park Boulevard and 45th Street.

The time required to respond to calls is generally kept within a three-minute limit, which is accepted as an adequate standard. However, access to the Bayfront area and the west side of Interstate 80 is constrained by traffic congestion on Powell Street, especially during the afternoon rush hour when response times have reached a high of seven minutes.¹ Although there are other routes besides Powell Street across the railroad tracks, these crossings, at 64th and 65th Streets, are unreliable because trains block the crossings at unscheduled intervals. Afternoon commute hour traffic can also present a problem for a fire truck attempting to enter or cross San Pablo Avenue from Fire Station #1. In addition, the median strip prevents immediate access in both directions.

Police Protection. The Emeryville Police Department is stationed in the new city Hall, approximately 2-3 minutes for top-priority calls from anywhere in the City.

Solid Waste Disposal. There are no landfill or transfer stations located in the City. Solid waste collection and disposal in Emeryville is performed by Oakland Scavenger Company, which hauls the garbage to a transfer station in San Leandro.

Stormwater Drainage. The City's drainage system collects the stormwater runoff and discharges it into the Bay at three locations: west of the freeway opposite 65th Street; near the south side of the Powell Street interchange, and at Temescal Creek. Demand on the storm drain system is greatest during periods when heavy rainfall is combined with high tides. Although the outfall lines appear to have the capacity to handle at least a 10-year storm, the collection system, in certain areas, lacks the ability to adequately transport the runoff to the outfalls. This is particularly evident in Christie Avenue north of Powell Street, where localized flooding

¹Ray Vittori, Fire Chief, Emeryville Fire Department.

occurs during heavy storms. The current capacity of the 54" outfall along Powell Street is severely impaired because of heavy siltation, and runoff is forced into a 60" relief pipeline that runs to Temescal Creek.

It is not anticipated that future development would increase the volume of runoff, because of the current "built-up and paved-over" nature of the entire area. Individual development would likely improve the collection system that connects to the outfall lines. There are no stormwater detention ponds or facilities located in the City.

Public Utilities

Water Supply. The supplier of domestic water to the City is East Bay Municipal Utility District (EBMUD) which owns, operates, and maintains the existing system. The main water supply line is a 36"-diameter line in Hollis Street. The distribution system consists mostly of 8" and some 10" lines that create "loops" in a limited number of areas. At present, there are no identifiable, significant deficiencies in the system in terms of primary use for residential and nonresidential use or for emergency supply. However, many of the existing cast iron lines were installed in the 1920s and 1930s. These lines are replaced as needed when they fail, and are up-sized and replaced as required by development. Future flow increases can be handled by the 36" main in Hollis Street and no additional pump stations or reservoirs are required.

Wastewater Treatment. The existing sanitary sewer system consists of a series of collector lines running from east to west which are fed by laterals and a few north-south collectors. The main collector lines run westerly to Interstate 80 where they connect to a major interceptor pipeline that ranges in diameter from 66" just south of Ashby to 84" south of Temescal Creek. This major interceptor conveys wastewater to the EBMUD Sewage Treatment Plant in Oakland. The collector lines are owned and maintained by the City of Emeryville and the interceptor is owned and operated by EBMUD. Sewage from the City of Oakland, upstream from Emeryville, also flows in those collectors.

Because of a serious inflow/infiltration (I/I) problem, peak wet weather flow pushes the system beyond its capacity during major storms, resulting in raw sewage overflows. In an effort to control this problem, EBMUD is conducting an East Bay I/I study that will culminate in a 20-year capital improvements program specifying programs to rehabilitate publicly-owned sewer mains, construct relief sewers to increase capacity during wet weather, and rehabilitate privately-owned building laterals.

Other. Gas and electric service is provided by Pacific Gas & Electric Company. Gas mains are located underground within public rights-of-way. Electrical service is transmitted via underground and overhead utility lines. Telephone service is provided by Pacific Bell. There are no major generation, transmission, or distribution facilities in the City.

Objectives

- A. Promote development of a highly attractive, mixed-use City center.
- B. Develop a high-quality school system.
- C. Distribute, locate, and design public safety facilities and services in a manner that will provide effective and efficient responses to threats to life and property.
- D. Satisfy the outdoor recreation needs of all members of the community.

Policies

Public Buildings

1. Public, administrative, and civic functions should be centrally located and easily accessible to all members of the community. Opportunities for cultural, educational, and community activities should be made available at the civic center. Public exhibits of works by Emeryville's local artist community should be actively encouraged.

Appropriate locations would be in areas containing a mix of retail, office, and business service activities. The site should be within one-quarter mile of transit service and along the City's proposed pedestrian circulation system. Sites satisfying these criteria include:

- the City Center,
 - the proposed mixed-use complex near the Westinghouse building, and
 - the vicinity of the proposed Hollis Street Park.
2. The existing municipal buildings on Park Avenue and on Powell Street should be retained for other public uses.
 - Consideration should be given to reusing the Old Town Hall for a community meeting hall, an art exhibit showroom, a child care facility, or some other public function.
 - Consideration should be given to reusing the new City Hall for a community meeting hall, an educational interpretive center for the Emeryville Crescent, and a fire station.
 3. The City should consider the proposed civic center area as an appropriate location for new public buildings that have a high degree of public use, such as a library.
 4. A centralized police facility should be integrated as part of the civic center. To ensure adequate response during emergency situations, the police facility should be sited with access directly onto an arterial-level road (see Circulation Element in this chapter for definition).

5. Although there is no present demand for an additional school facility, the City shall inform the Emery Unified School District of all new development and building permit activity so that future facility requirements can be anticipated.
6. The Ralph Hawley School site should be retained as an educational, recreation, and/or child care facility. It is conveniently located in a residential area, near to the City's jobs, adjacent to an existing mini-park, and along the proposed pedestrian circulation and open space systems (see Recreation section, below).
7. The City should actively explore permanent locations for child day care facilities. Two possible locations include the Old Town Hall or the Ralph Hawley School. Other potential locations should be near transit service and close to recreational facilities.
8. The City shall revise its zoning ordinance to permit child day care facilities. The use of single family residences for small child day care facilities (six or fewer children) shall be considered a residential use for purposes of all local ordinances. Large family day care homes (seven to twelve children, inclusive) shall be subject to a use permit.

Recreation

9. The State Parks and Recreation Department proposal for an East Bay Shoreline Park should be supported. However, the City should discourage construction of a pathway that traverses the Emeryville Crescent unless no alternative can be found, and only if assurances are made that no human contact with sensitive wildlife areas will occur.
10. Recreational opportunities shall be provided for all residents, regardless of race, age, economic status, physical disability, or location of residence. Because each of these groups have different recreation needs, the City should provide open space and outdoor recreational facilities which are appropriate to the type of user (according to age, distance from park, etc.) and the type of park space. Families, teenagers, young children, and the elderly are special user groups. Family recreation involves both active recreation facilities, such as game fields, and passive recreation facilities like picnic tables and playground equipment. Gathering places and active recreation facilities are appropriate for teenagers. Benches from which parents can supervise their children are necessary in children's playgrounds. Passive recreation facilities should be provided where elderly persons reside. These facilities include benches and pathways from which much of the neighborhood activity is visible. Table III-18 presents standards to be followed by the City in developing new recreational opportunities.

Figure III-10 describes the proposed recreation and open space plan. The open space system should provide for:

- increased pedestrian accessibility to the Bay shoreline, except in ecologically sensitive areas;
- local pedestrian and bicycle connections between parks and residential areas of East Emeryville, the Bayfront, and the Peninsula;
- increased recreational opportunities in older residential areas;

FIGURE III-10
OPEN SPACE AND
RECREATION PLAN

NATURAL OPEN SPACE

-  PROVIDE OPEN SPACE ALONG THE BAY
-  PRESERVE EMERYVILLE CRESCENT

PUBLIC PARKS

- ① HOLLIS STREET PARK
- ② TEMESCAL PARK
- ③ PENINSULA PARK (EXISTING)
- ④ 47TH STREET PARK
-  NEIGHBORHOOD PARK
-  LANDSCAPED TERMINUS OR MINI-PARK
-  PEDESTRIAN CORRIDOR/MINI-PARKS

URBAN PLAZAS

- ⑤ MAIN CITY SQUARE
- ⑥ WATERFRONT PLAZA
- ⑦ WESTINGHOUSE COURT

Note: This figure is intended to serve as a locational guide. Park sizes are exaggerated to indicate locational relationships and pedestrian access.

0 200 400 800

EMERYVILLE
GENERAL PLAN

SEDWAY COOKE ASSOCIATES

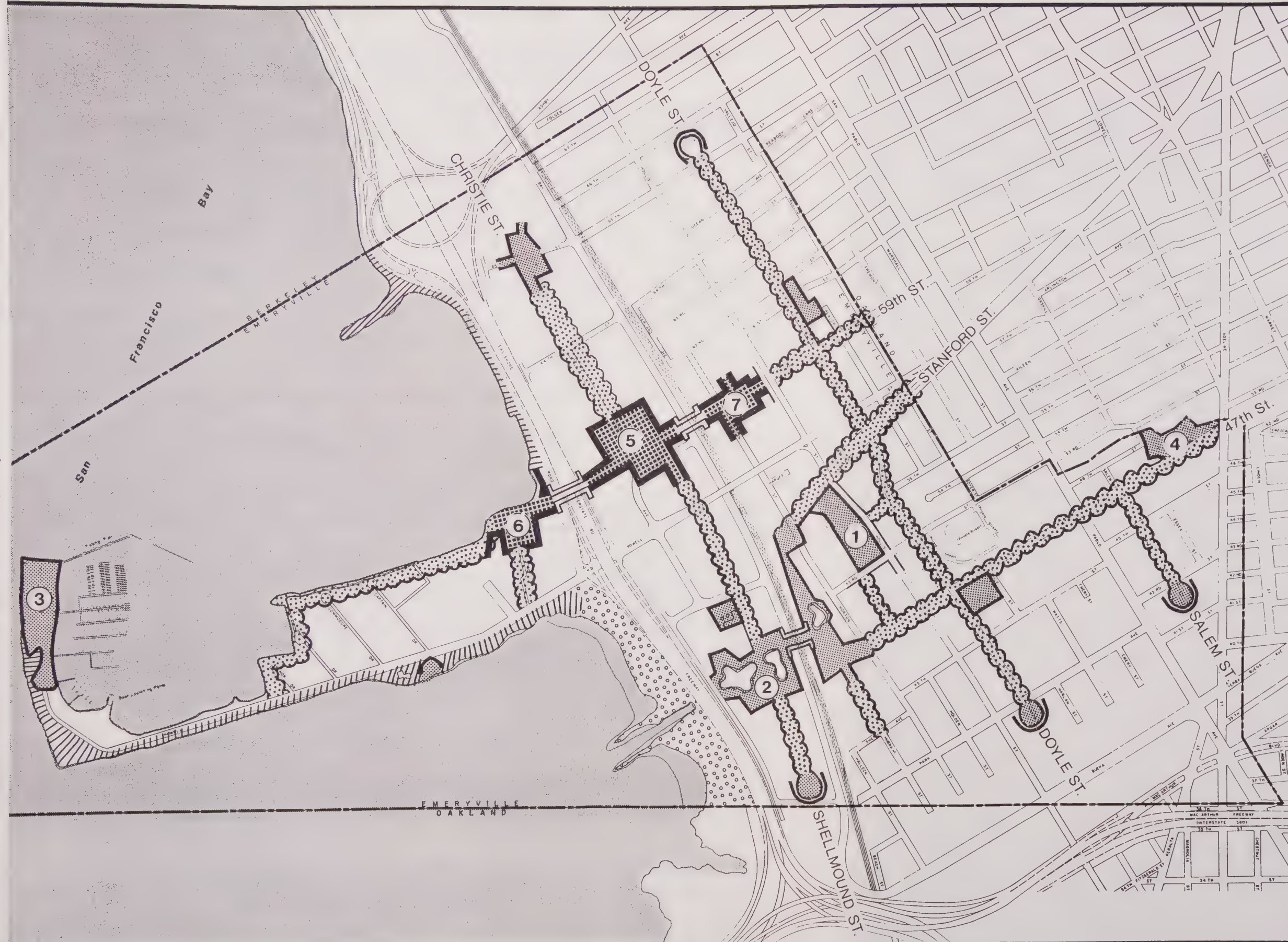
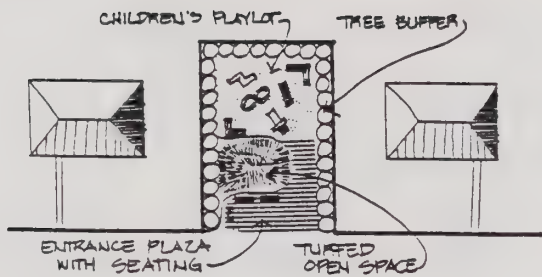


TABLE III-18: RECREATION AND OPEN SPACE STANDARDS

<u>Park Type</u>	<u>Total Needed</u>	<u>Typical Size</u>	<u>Population Served</u>	<u>Distance to Park</u>
Mini-Park or Vest-Pocket Park	0.25 acre per 1,000 people	1,500-10,000 square feet	500-1,000	1/4 mile
Neighborhood Park	0.5-1 acre per 1,000 people	1-2 acres	1,000-3,000	1/2-1 mile
Community Park	1-1.5 acre per 1,000 people	2-5 acres	3,000-10,000	up to 2 miles
TOTAL	1.75-2.75 acres per 1,000 people Citywide			

- restoration of Temescal Creek to its natural state where possible, with park lands adjoining this corridor; and
 - pedestrian/bicycle bridges over the freeway and the railroad tracks to ensure that the open space system is integrated citywide and that all residents may reach the major open space areas easily and safely.
11. A community park should be provided in a centralized location, connected to residential areas by bicycle and pedestrian pathways. Figure III-10 illustrates a suitable location for a "central" park. It should be 2-5 acres in size, be accessible by public transit, and contain facilities which could accommodate the varying needs of all Emeryville residents. The park should be a center of community activity. Figure III-22 in the Community Design Element in this chapter illustrates some of the considerations needed to design the facility and its adjoining areas. If arrangements can be made to gain public access to the recreational facilities at Emery High School, the community park could be at the smaller end of the size standards; could place greater emphasis on landscaped, sitting areas; and should be considered a prime location for a community building and child day care facility.
12. Small parks and open space areas should be provided to serve individual neighborhoods. Figure III-10 illustrates generalized locations for some of these parks. Figure III-11 highlights some of the facilities which these parks may contain.
- Neighborhood parks should be as large as 1-2 acres, located within 1/2-1 mile of the residents they are to serve. Each neighborhood park may serve 1,000-3,000 people.



MINI-PARK
(2,000 to 10,000 square feet)

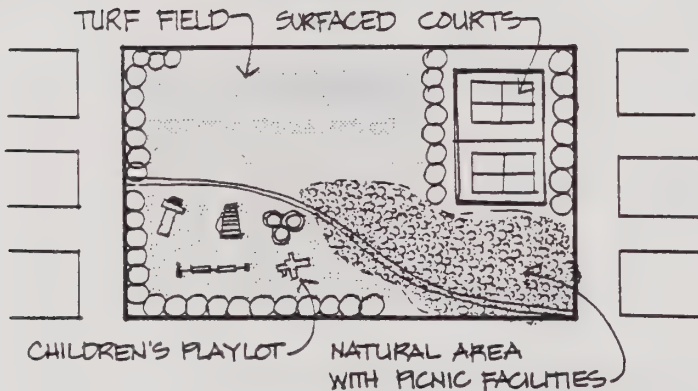
Typical Facilities

- toddler play area
- benches/seating
- basketball
- multi-use courts
- landscaping

Primary Users

- toddlers and parents
- children aged 5-14
- elderly

Maximum Optimal Distance
From Users: 1/4 mile.



MEDIUM-SIZED PARK
(1 to 2 acres)

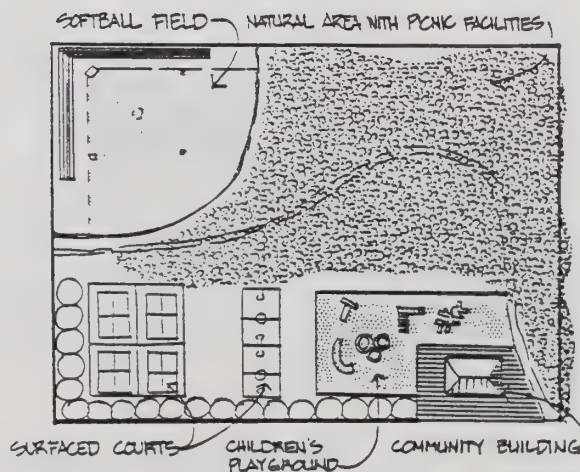
Typical Facilities

- toddler play area
- playground for older children
- multi-use courts
- multi-use playing field
- natural and landscaped areas with picnic facilities.
- benches/seating

Primary Users

- toddlers and parents
- children aged 5-14
- elderly

Maximum Optimal Distance
From Users: 1/2 to 1 mile.



LARGE PARK
(2 to 5 acres)

Typical Facilities

- toddler play area
- playground for older children
- tennis courts
- basketball courts
- softball field
- community building for programs
- natural and landscaped areas with picnic facilities
- benches/seating

Primary Users

- toddlers and parents
- children aged 5-18
- adults aged 18-39

Maximum Optimal Distance
From Users: up to 2 miles.

Figure III-11
RECREATION AREA PROTOTYPES

EMERYVILLE GENERAL PLAN

- Mini-parks may be formed in residential areas on vacant lots or at cul-de-sacs and street ends where traffic is to be discouraged. In parts of the Triangle and the North End, for example, truck traffic on some local streets represents both a nuisance and a hazard to local residents. The ends of these streets should be closed to traffic, thus discouraging "short-cuts" through residential areas while simultaneously providing easily accessible recreation for residents. These parks should be from 1,500 square feet to 10,000 square feet in size, and may provide benches or landscaped walkways, basketball courts, or play structures for young children, depending on the needs of the immediate neighborhood. Mini-parks may be located along the pedestrian corridors indicated in Figure III-10, but shall not be limited to these locations.
13. All parks and recreation facilities should be planned as part of an overall system which integrates outdoor open space needs with other public facilities needs. Existing physical resources should be utilized where appropriate. Schools may be used as recreational facilities after school hours. Parks which are adjacent to schools make better use of land and effectively increase the outdoor space available for both purposes without significantly raising costs for either. Parking requirements for outdoor recreation may be satisfied by sharing space provided at these other public facilities.
 14. Parks should be designed for simple maintenance. Drought-resistant shrubs and trees should be encouraged in passive recreation areas. Facilities which require sod should be minimized and concentrated in a few areas, such as the Peninsula Park and the Hollis Street Park. Sod should be placed in neighborhood parks for recreational purposes rather than for aesthetic purposes and maintenance should be simplified where possible. Open space areas in new residential development should be maintained by the developer if they serve only that new development.
 15. The open space/recreation system should provide facilities and sites for environmental education, cultural activities, and community events. In order to provide public accessibility and encourage maximum use, the parks and open space areas should be connected by pathways and landscaped streets to residential areas and other public facilities.
 16. Pathways and parks shall be designed to give individuals a sense of security and well-being while using them. Pathways should be lit at night, and parks should invite use and allow surveillance by surrounding residents. (See the Fire and Crime Element in Chapter V for additional policies regarding safety.)

Public Utilities

17. The City should develop a program to monitor and repair/upgrade its water, storm drain, and sewer lines. All improvements to the existing wastewater, water, or storm drainage service systems necessitated by the approval of a new development project shall be financed entirely by the project proponent either by fee, participation in an assessment district, or actual construction, except in specially targeted areas where the City wants to encourage private investment.
18. In areas where major new development is anticipated, such as those identified in Figure II-4, the City should require that the construction of roadway, water,

sewer, and storm drainage improvements be coordinated to provide the most cost-effective service. In particular, the City should ensure that new conduits and storm drains in the Bayfront are adequately sized to correct existing localized flooding problems.

19. The City should cooperate with East Bay Municipal Utility District efforts to curb infiltration and inflow into the sewer lines.

Implementation

1. Consider exercising authority of the Redevelopment Agency to acquire land, manage property, relocate people and businesses, clear land, prepare sites, build facilities, sell land, and rehabilitate buildings and structures (City Redevelopment Agency). To finance the improvements, the Redevelopment Agency can use property taxes from the redevelopment area, the sale of tax allocation bonds, mortgage revenue bonds, special assessments, developer contributions, and lease-purchase agreements. The City Center and Hollis Street Park locations for the civic center lie entirely within the Emeryville Redevelopment Project Area. A portion of the Westinghouse site lies in the project area.
2. Prepare a capital improvements program, projecting annual expenditures for acquisition, construction, rehabilitation, and replacement of Emeryville's public buildings and facilities (City). Typically, the program would include sewer and water facilities, street and road improvements, street lights, traffic signals, parks, police and fire facilities, and other public buildings.
3. Consider use of the Mello-Roos Community Facilities Act, which authorizes local governments to levy special taxes within newly created community facility districts and to use the funds to pay for virtually any capital construction (City). The special taxes could also be used as a financing vehicle for operating and maintenance costs for police, fire, parks, recreation, and parkways. The bill also authorizes the local government to issue bonds backed by these special taxes, which require passage by a two-thirds majority vote by the registered voters residing within the boundaries of the Community Facilities District.
4. Where in the City's long term best interest, consider the use of Development Agreements or Owner Participation Agreements to establish rules to be followed by the developer and the City which will govern the approval and development of a project (City, developers). As defined by Government Code Section 65864, a development agreement would allow the City to enter into agreements with developers in which the City effectively promises not to change its planning or zoning laws applicable to the development for a specified period of time, in return for a commitment on the part of the developer to construct specific improvements, provide public facilities and services, develop according to a specified time schedule or make other commitments which the jurisdiction cannot ordinarily require of the developer. At a minimum, a master development plan and environmental impact report should be prepared. Development agreements offer certainty in the development process: it assures the City that certain conditions it wishes to impose on the project (such as scheduling or provision of public facilities) will be performed, and it assures the developer that planning or zoning laws affecting the project site will not change.

The agreements are particularly appropriate for large multi-phase developments where the developer will be required to make substantial investments for public facilities. They essentially reduce the financial risk to the City by assuring that the improvements promised by the developer will be implemented even if the development fails financially.

5. Use dedications and exactions permitted by the Subdivision Map Act (City):
 - streets, drainage, public utility easements, and public easements (Government Code Section 66475);
 - access to waterways, rivers, and streams (Government Code Sections 66478.4 and 66478.5);
 - drainage and sanitary sewer facilities (Government Code Section 66483);
 - bridges and major thoroughfares (Government Code Section 66484); and
 - park and recreational purposes if the parks and recreational facilities are consistent with this Plan (Government Code Section 66477).

Similarly, possible locations for public facilities such as the civic center, schools, fire stations, and libraries can be reserved by local ordinance in accordance with Government Code Section 66479. A requirement for reservation of real property for the public uses indicated can be imposed if such requirement is based upon an adopted public facilities element, and if the reserved area is of such size and shape as to permit the balance of the property to develop in an orderly and efficient manner. The amount of land reserved cannot make development of the remaining land held by the subdivider economically infeasible. Upon approval of the final map, the City and the developer will agree to acquire the reserved area within two years after the completion and acceptance of all improvements, unless this time period is mutually extended.

6. Encourage community participation in park and recreation planning (City). Develop programs which solicit advice from residents when determining appropriate facilities for and design of neighborhood, vest-pocket, or cul-de-sac parks.
7. Support better public transit service to the proposed parks, the Bay shoreline, and the City Center (City, transit agencies).
8. Encourage joint use of open space/outdoor recreation facilities with other public facilities where appropriate (City, Emery Unified School District, private organizations). Utilize existing school facilities for recreational purposes during non-school hours, and explore the possibility of re-opening Ralph Hawley School as a community recreation center or public park if not used for educational purposes.
9. Strengthen the role of parks and open space for environmental education and cultural arts (City, State Coastal Conservancy, State Department of Parks and Recreation). Consider development of an interpretive center near the Emeryville Crescent, and initiate cultural activities on public park lands.

10. Consider alternative and innovative programs for recreation leadership, management, and light maintenance, such as trash removal. (City, local educational institutions, State Department of Parks and Recreation, State Coastal Conservancy, citizens' organizations). Consider development of an intern program with local colleges and universities. Encourage support and participation from citizens' organizations, neighborhood residents, or other volunteers. Participate in State and Federal government youth conservation programs.
11. Seek State funding for development of the East Bay Shoreline Park and for citywide recreation projects. (City, State Department of Parks and Recreation, State Coastal Conservancy, citizens' organizations). Appendix D (Open Space and Outdoor Recreation) summarizes many of the available programs.
12. In order to select an appropriate strategy for the City, investigate ordinances enacted in other communities that require project proponents to allocate a portion of their project costs for the commissioning and display of art works (City).

F. LAND USE

Introduction

Given the earlier discussions of population and employment growth, and demand for public facilities, the crucial question is: how much land is needed to meet the future demand for residences, commercial businesses, industrial enterprises, recreation, and public services? The Land Use Element is intended to allocate sufficient area to accommodate Emeryville's future needs, to establish appropriate building intensities, and to minimize the impacts associated with incompatible uses located adjacent to one another.

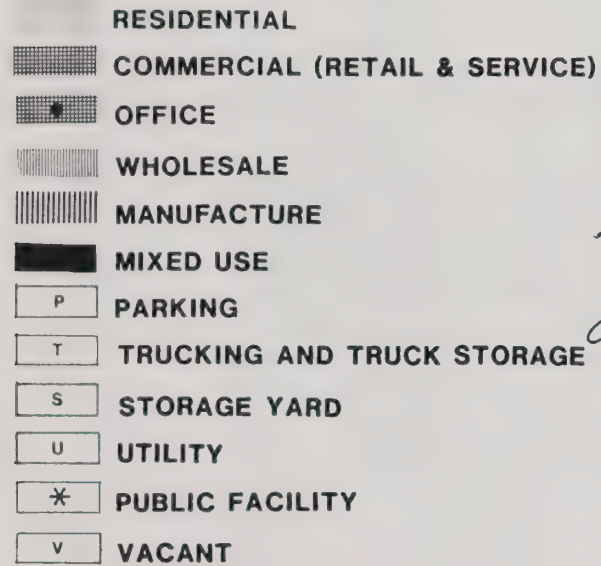
Specifically, the Land Use Element, as set forth in Government Code Section 65302(a), must designate the proposed general distribution and general location of the uses of land for housing, business, industry, open space, education, public buildings and grounds, and other categories of public and private uses of land.

Land Utilization

Existing Uses. Incorporated in 1896, Emeryville originally was part of a large Spanish land grant. The City's excellent rail and highway access and its proximity to the region's major centers of commerce has continued to be attractive to manufacturing and other transportation-sensitive industries. The land portion of the City occupies 750 acres, with 340 acres or 45% of the total land occupied by manufacturing and wholesale activities, and 98 acres or 13% by residences. Development patterns, building types, railroad tracks, and Interstate 80 divide Emeryville into three subareas: the Peninsula, the Bayfront and East Emeryville. Within these subareas, the land uses tend to occur in discrete bands. Figure III-12 shows the City's current land uses; Table III-19 summarizes the acreage by use. A brief description of the subareas' predominant land use patterns is presented below.

Figure III-12

EXISTING LAND USE, 1984



EMERYVILLE GENERAL PLAN

SEDWAY COOKE ASSOCIATES

Urban and Environmental Planners and Designers

Scale in Feet 0 200 400 600 800 1000 2000

TABLE III-19: EXISTING LAND USE, 1980

<u>Land Use</u>	<u>Acreage</u>	<u>% of City Total</u>
Manufacturing, warehousing, and transportation services	337.4	45.0
Residential	97.5	13.0
Office, retail, and commercial	75.0	10.0
Public facilities	13.6	1.8
Open space, recreation	75.0	10.0
Public rights-of-way	<u>151.5</u>	<u>21.0</u>
Total Land Area	750.0	100.0

Source: City of Emeryville, Final Environmental Impact Report on the Redevelopment Plan, August 1983, p. 32.

The Peninsula. The Peninsula comprises the entire land area west of Interstate 80 and consists entirely of bay fill. This area was originally a railroad pier built in the early 1900s. No solid land existed west of what is now the freeway until 1931 when a second pier was built just north of the first and the space in between was filled. Later that same decade, filling activity was resumed to construct the original marina. Between the 1930s and 1974, when bay filling became illegal, the Peninsula continued to grow and change shape on a regular basis.¹ During this time, the primary land uses were mostly recreational with some light industry. In the mid-1970s, an intensive redevelopment process began with construction of the Watergate apartment complex (later to be converted to condominiums), followed by construction of several high-rise office buildings, a major hotel, and several freestanding restaurants. Today, little remains of the Peninsula's historic land uses. The marina is still there in a much expanded form, and a park at the Peninsula's tip is one of the City's only major recreation and open space areas.

The Bayfront. The Bayfront is a band of land wedged between Interstate 80 on the west and the railroad tracks on the east. Like the Peninsula, the Bayfront land uses have been strongly influenced by the area's proximity to the bay and the freeway. However, here the redevelopment process has been less intensive and less pervasive. There are several relatively new mid-rise office buildings and commercial businesses clustered around the intersection of Powell Street and Interstate 80. With the exception of the Pacific Park Plaza condominiums, these buildings are surrounded by

¹ Doris Sloan, ed., The East Bay Shoreline: Selected Environmental Issues, June 1982.

one- and two-story buildings accommodating trucking, wholesaling, and some manufacturing operations, ranging from the very small, with only one or two employees, to the very large, with over 500. Only a few business service activities that might serve the high-rise office buildings are in operation, including two print shops and several graphic designers. In general, these more intensive office activities within the Bayfront exist in spite of the traditional land uses, i.e., the trucking terminals, wholesalers, and manufacturers, with no mutual benefit or major conflict.

East Emeryville. East Emeryville encompasses a portion of the City east of the railroad tracks. This subarea has three major land uses that strongly contrast with each other. The first is manufacturing which also includes a smaller proportion of wholesaling and other business uses. Due to zoning restrictions, these activities are primarily contained between the railroad tracks and Doyle Street with a few exceptions along San Pablo Avenue and Adeline Street. The second major land use is the City's residential neighborhoods which lie east of Doyle Street and include the "Triangle" formed by San Pablo Avenue, Adeline Street, and the city limits. The third major land use is the retail commercial strip along San Pablo Avenue and Adeline Street.

Prospects for the Future. The following discussion considers how demand for non-residential land is expected to change in Emeryville. Residential land demand is discussed in the Housing Element.

Manufacturing. Manufacturing has been Emeryville's primary land use for over a century. This sector also dominates the City's economy, accounting for 42% of the total business establishments and 44% of total employment. Within the manufacturing sector in Emeryville there are six major subsectors including food, furniture, printing, chemicals and allied products, primary metals, and machinery, as well as a small but blossoming arts and crafts sector. There are several key factors that manufacturing businesses consider in selecting their plant location. Most manufacturing activities want to be close to either their source of raw materials or the market for their finished product. Because of Emeryville's location close to the geographic center of a large metropolitan region, it is a perfect location for firms with a broad market within the region. A second factor that works in conjunction with location is transportation access. Emeryville's proximity to the region's major highways and railroad lines makes it easy for companies to transport supplies and finished products. A third factor is the supply of space available for manufacturing activities. Until recently, land and space in Emeryville were relatively inexpensive and readily available, making the City a particularly good place for firms to start up.

The future manufacturing land use pattern will depend a great deal on where each subsector is in its business cycle. The food and primary metals sectors are both in the declining end of the cycle. This means that the market for these products has peaked and begun to wane. A number of food processing and primary metals operations have already closed around California. This would leave a considerable amount of space available for redevelopment either by other manufacturing firms or different land uses in Emeryville.

The machinery and parts subsector and the chemical and allied products subsector are considered mature industries in that their markets have probably reached their peak size. Firms in this category are still healthy but they are not expanding and are likely to begin declining over the next five to ten years, unless they modify their product lines to satisfy a changing market. Pfizer Chemical's operation is probably the best example of a mature industry.

Growth industries, i.e., companies with rapidly expanding markets, are also visible in Emeryville. These companies are likely to occupy space vacated by the declining industries, as well as creating pressure for new space to meet their different needs. The bio-technology research companies typify the new growth industries. These industries often have very different space requirements than the old manufacturing firms and they are not as transportation dependent since their goods are generally small and lightweight. Instead, other amenities including retail shops, restaurants, and open space have replaced some of the more traditional factors in location decisions.

Another important growth industry is Emeryville's burgeoning arts and crafts community. This group includes everything from custom furniture makers to painters and sculptors. While fine arts and crafts people are not manufacturing industries in the conventional sense, they are included here because they have special spatial requirements related to producing a specific type of product. Like the conventional manufacturing operations, arts and crafts people need inexpensive space where they can work, and sometimes live, without disturbing anybody.

Wholesaling. Wholesaling is another major sector in Emeryville from both a land use and an economic perspective. About 25% of the business establishments are in wholesaling and account for 11% of the City's total employment. Like manufacturing, this sector comprises a broad spectrum of activities and land use requirements. The range of activities includes trucking, warehousing/distribution, and manufacturers' representatives.

Trucking and warehousing/distribution are both very space intensive and reliant on good transportation access. Therefore, the City's comparative advantages regarding these factors have attracted many trucking and warehousing businesses. Most of these firms are concentrated in the Bayfront where they occupy much of this area's prime land. The large trucking companies, in particular, are directly adjacent to the freeway and are not crowded by the manufacturing operations clustered along the east side of the railroad tracks.

These two activities, more than any others in the City, are being displaced by completely different land uses as part of the City's redevelopment. There are two main reasons for this phenomenon. First, these industries require a lot of land but not a lot of investment in buildings or machinery. Consequently, they are very sensitive to land costs. If land costs increase dramatically, as they have in the Bayfront, trucking and warehousing will be displaced by land uses that can afford higher land costs. Second, trucking and warehousing industries are undergoing a restructuring process all over the country where distribution points are being centralized in non-metropolitan areas. Much of the Bay Area's trucking and warehousing businesses have moved to Sacramento or the Central Valley where land is cheaper and several metropolitan areas can be served from a central location.

Offices. This sector includes most business activities that occur in office buildings, including finance, insurance, real estate, and professional services like lawyers. In Emeryville, these activities are concentrated in the high-rise and mid-rise office buildings immediately east and west of Interstate 80. Although the tenants of these buildings may have no direct relationship to each other, the buildings themselves do have a relationship in that they create a distinct identity in the real estate market. If and when more buildings are built, particularly in the Bayfront area, Emeryville's identity as an industrial center will become increasingly less preeminent and the City's image as an office center will be enhanced. This enhanced reputation will help the marketability of all office space within the City.

Concentrations of office buildings also generate demand for certain types of business services like print shops, delivery services, and office machine repair. Like retail and personal services, these business services require certain office population densities and must be located in close proximity to their customers. Although the office density in Emeryville is not yet high enough to support a full range of business services, there are a few in the Bayfront area. If office development continues, more of these service businesses are likely to move into Emeryville.

Retail and Commercial. Retail and commercial activities, primarily personal services, are very dependent on being close and/or easily accessible to the population they serve. Some forms of retail and commercial activity benefit from being near residential areas while other activities tend to cluster near offices or other business establishments. In either case, the size of the population to be served is an important factor in determining the types of goods and services that are available. A population's disposable income is also a very important consideration to retailers. Because the residential population of Emeryville has historically been very small and was considered to have limited buying power, no major retailers, like supermarkets, chose to locate in the City. Except for a few corner locations such as at the Watergate complex and the Marketplace, most of Emeryville's retail and commercial enterprises are located on San Pablo Avenue or Adeline Street where they are accessible to Oakland residents and are visible to large numbers of drivers. Regional retail activities are typically found in conventional shopping centers and the large freestanding specialty or discount retail businesses that attract customers from a regional market area. Paramount to these concerns are convenience to the regional transportation system and visibility.

Areas Susceptible to Change. Because the factors affecting land use are numerous and complex, it is helpful to establish a simple measure for assessing potential change against which other factors can be weighed. One widely used measure is the ratio of investment, or improvements, on a given piece of land to its land value (I/L ratio). It gives an indication of how much the improvements, e.g., buildings, are worth relative to the value of the land. Using information available to the public from the county tax assessor, the ratio is calculated by dividing the assessed value of any individual parcel improvements by the land value. If the improvements and the land are worth the same, the I/L ratio equals one. If the improvements are worth twice as much as the land, the ratio equals two, and so on. Generally, when the improvements are worth less than the land, the property is more valuable for its potential rather than its current use. Therefore, market forces begin asserting pressure, and the land is likely to be sold or redeveloped for a more intensive use commensurate with the land value. Since passage of Proposition 13, property taxes are based on 1978 assessment values which are allowed to increase by 2% each year. A parcel can be reassessed at its full market value only when it is sold. If the assessed land values were inflated to reflect their current market value, the I/L ratio would be lower and many more parcels would be in the underutilized category than appear now.

The I/L ratios for all nonresidential parcels in Emeryville are shown in Figure III-13 and summarized in Table III-20. Patterns emerge in different areas of the City, highlighting where change is likely to occur, where it has already occurred, where it might occur five years from now, and what the exact land supply will be for each category.

TABLE III-20: LAND UTILIZATION BY SUBAREA (acres)

	<u>Peninsula</u>	<u>Bayfront</u>	<u>East Emeryville</u>	<u>City Total</u>
Underutilized	40.8	74.1	88.7	180.7
Marginal	0	16.2	44.3	60.5
Stable	59.5	30.2	84.4	174.1

Source: Sedway Cooke Associates, 1984.

Parcels with a ratio of less than 0.90 are the most likely to undergo immediate change. They are often typified by businesses in the declining phase of their business cycle and where land values have begun to rise as Emeryville has begun to attract more intensive development. This has already begun to happen in the Bayfront area. As described earlier, many wholesaling distribution operations have found it more cost-effective to centralize their distribution points in non-metropolitan areas where land is less expensive. It is these parcels that can be considered as the land supply available for redevelopment. Other locations that are expected to be available include lands owned by utilities and transportation companies, such as PG&E and Santa Fe, respectively. PG&E controls 13.5 acres of prime land along Hollis Street near the Old Town Hall. Santa Fe owns a considerable amount of land along Yerba Buena Avenue that is currently used by some trucking companies, primarily as storage areas.

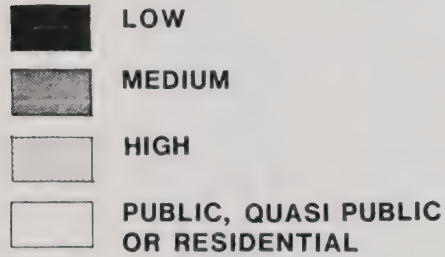
Those parcels with ratios of 0.90 to 1.40 have improvements valuable enough to sustain their current uses under present market conditions. Fewer are for sale than those with lower ratios and many buildings that are sold are rehabilitated instead of demolished. Most buildings with ratios of 1.11 to 1.40 are older structures possessing intrinsic aesthetic quality, making them good for adaptive reuse.

In an area like Emeryville where there is considerable development activity, property values are beginning to increase considerably. Based on the limited information available from recent land sales, property appears to be selling at about three times its assessed value. If the land portion of the parcel's assessment were inflated to reflect this increase, then the ratios on all property in the marginal range would drop into the underutilized category. This indicates that with changing market conditions, properties now considered relatively stable could become underutilized, paving the way for some form of reinvestment and land use change. However, because most of the buildings on parcels in this range lend themselves to adaptive reuse, very few will be removed to make room for new structures. Consequently, building square footage, rather than land acreage, is more representative of the development potential of the marginal parcels.

Parcels with ratios greater than 1.40 have generally incurred some form of reinvestment within the last five or so years. Many buildings with ratios between 1.40 and 2.00 have already undergone some rehabilitation which has elevated them from the marginal category. A considerable amount of this activity has begun to occur on

Figure III-13

LAND UTILIZATION (NONRESIDENTIAL LANDS)



* MAY BE SUBJECT TO PRIVATE ACQUISITION; THEREFORE,
SITE WOULD BE CONSIDERED HIGHLY SUSCEPTIBLE FOR
REINVESTMENT.

III-87

17

EMERYVILLE
OAKLAND

EMERYVILLE GENERAL PLAN

SEDWAY COOKE ASSOCIATES

Urban and Environmental Planners and Designers

SCALE IN FEET 0 200 400 600 800 1000 2000



Horton Street from 45th Street north to the railroad tracks. Many of the parcels with ratios in the 2.01-4.00 range are newer buildings built between 1960 and 1970, like the large warehouse facility to the north of Pfizer Chemical. Most parcels with ratios over 4.00 have new buildings on them built in the last ten years. Only in a few instances have older buildings undergone enough rehabilitation to be valued at a ratio of over 4.00. Most notable of these are the buildings occupied by Cetus that were upgraded to incorporate the laboratory requirements of the bio-technology industry. In terms of long-range land use planning, all parcels in the stable category can be expected to remain in their existing physical form if not their current land use.

Land Use Compatibility

Land uses can be complementary as well as conflicting. Conflicts can take a variety of forms and generally occur when different land uses exist in close proximity and where one use infringes on the environmental quality of the other. The major land use conflicts in Emeryville involve visual conflict and noise. There may be additional conflicts, but a visual analysis and land use survey of the entire City indicated that these two are the most serious and pervasive.

Visual Conflicts. Visual conflicts often occur in locations where two adjacent and very different land uses have no buffering or intervening use between them. This type of problem occurs along Doyle Street from Ocean Avenue at the north end to the street's southern end, because it delineates a major transition between residential uses on its east side and industrial uses on its west side. Consequently, many houses face directly onto heavy manufacturing operations. A second area where visual conflicts exist is the commercial strip along San Pablo which abuts a residential area. This strip, which serves a regional market, attracts considerable vehicular traffic that bears no relationship to the residential area behind it. The nature of all strip development is visually unappealing and its automobile orientation, clutter of street signs and lights, and population density are not particularly compatible with a low-density residential neighborhood.

Smaller areas of visual conflict also exist along Adeline Street where commercial and industrial land uses are inappropriately intermixed. Also, the City's entire southeastern tip, including the stretch along the railroad tracks, is a mix of uses where visual conflict and blight are among many physical conditions requiring attention.

Noise. Industrial areas, besides producing negative visual impacts, create other problems, including excessive noise. In Emeryville, which is a small area, there are a number of locations where manufacturing activity noise levels disturb adjacent residential neighborhoods. In addition to the operational noise generated by manufacturing activities, the City's manufacturing, trucking, and wholesaling businesses most often involve intensive trucking activities to transport materials or finished products. Because of the organization of the City's land uses, trucks often must traverse residential neighborhoods to reach their destinations. The noise and safety hazards imposed by this traffic are inappropriate and detrimental to the environmental quality of the City's residential areas. The issue of noise compatibility raised here has significant implications for the distribution of future land uses. A fuller discussion of this concern is presented in the Noise Element of the Public Health and Safety component.

Land Use Classification. One of the present difficulties with the existing land use classification system is that it is too broad. Essentially it provides for three land use categories: residential, commercial, and industrial. This degree of simplicity has certain advantages; namely, it is easy to comprehend, and it offers considerable flexibility to developers on the type of development they may consider. However, this amount of flexibility can also create problems. Most significantly, it does not provide City decision-makers with sufficient guidance on the appropriate location for different types of uses. For example, there are few provisions that would discourage a light industrial activity like the manufacturer of scientific instruments from locating next to a steel manufacturing plant. As a result, land uses can create adverse effects on neighboring uses, even though they are both acceptable under the broad land use categories currently in use.

Objectives

- A. Create a generalized set of land uses that best reflects the potential utilization of the City's land resources and describes them in sufficient detail to guide future land use and zoning decisions.
- B. Promote a pattern of development that provides a sense of organization and purpose to the City, denotes the extent and character of districts, and identifies centers of activity.
- C. Promote compatibility in uses.

Policies

General

1. Future land development in Emeryville shall be governed by the land use policy map, illustrated in Figure III-14. The policy map is a generalized interpretation of the written policies.
2. New development projects shall be an appropriate density based upon locational considerations, accessibility, and the density of the majority of existing surrounding uses. Figure III-15 should be used as a guide for maximum development densities, except in areas designated as conservation and infill areas in Figure II-4 and Table II-1. In these areas, maximum development density should be determined by the prevailing character and density of the surrounding development. The maximum development density outside conservation and infill areas should be approved only if there is adequate capacity on the circulation system or developers can demonstrate that measures they adopt to reduce traffic, such as increasing transit opportunities or transportation system management techniques (see Circulation Element) are effective.
3. The City should continuously monitor the impact and intensity of land uses on its public services to ensure that they are not overburdened. Land use and development review applications that are inconsistent with the capability of the circulation, water supply, wastewater disposal, fire, police, or school systems to operate adequately and cost-effectively shall not be approved.

Residential

4. The following residential land use categories shall be used to describe the appropriate character and density of residential locations with Emeryville. They are intended to provide the City with a range of housing types, sufficiently broad to deal flexibly with various site constraints and opportunities. Population densities are based on the citywide average household size of 1.7 persons.

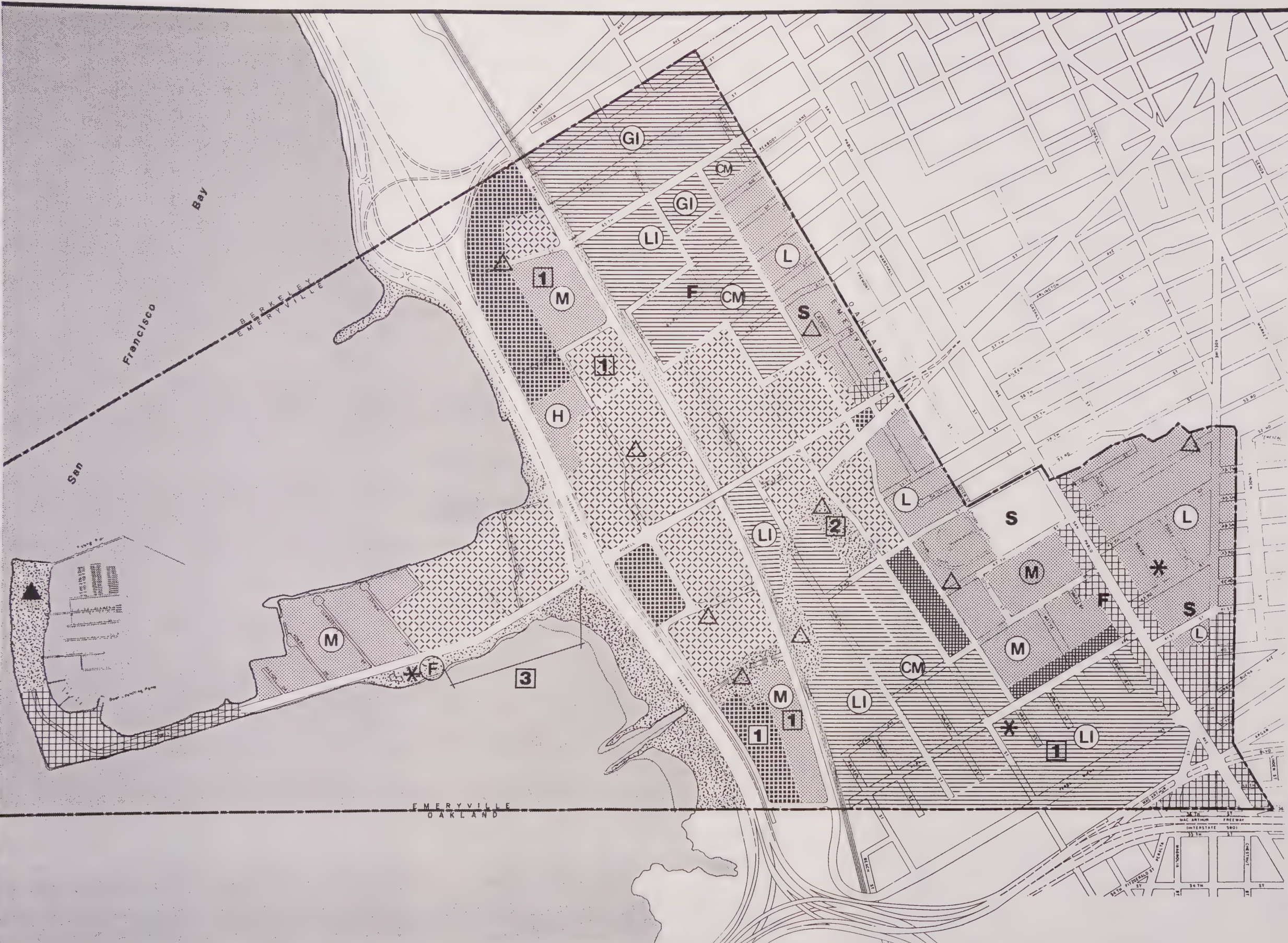
Low Density (less than 20 dwelling units per gross acre or approximately up to 34 persons per gross acre). This residential category accommodates single-family detached units, attached units, and townhouses. Single family units and structures with 2-4 units are typical of the type of residential development in the North End and in the Triangle. Floor area ratios may get as high as 0.5.

Medium Density (20-45 dwelling units per gross acre, or approximately 34-77 persons per gross acre). This residential category accommodates low-rise multifamily units and garden apartments; Emery Bay Village is an example of development at the low end of this range and the Watergate complex is an example of development at the high end of this range. Floor area ratios would vary from about 0.5 to 1.3.

High Density (more than 45 dwelling units per acre, or greater than approximately 77 persons per gross acre). This residential category is intended to allow high-rise multifamily units. Development at this level of intensity is only expected in mixed use areas. Floor area ratios would range from about 1.3 to 2.0.

5. The City should rezone underutilized industrial sites for housing where feasible. Such sites should be:
 - adjacent to or within one-quarter mile of existing or proposed open space,
 - outside of areas with significant geotechnical or flooding hazards, unless such hazards can be mitigated through building design and construction,
 - compatible with the noise environment, unless excess noise can be mitigated through site and building design and construction,
 - adjacent to or within one-quarter mile of existing or proposed transit routes,
 - free of soil contamination by hazardous substances, and
 - large enough (about 3 acres) to develop planned medium density residential projects with sufficient space for buffering and land-scaping to avoid conflicts with surrounding uses.
6. Infill residential development in established residential areas should respect the prevailing building type in the surrounding areas, so that new development is not incompatible with the area's existing scale and character. Densities at the high end of the range shown in the Land Use Plan should be permitted only if it can be demonstrated that existing scale and character of the neighborhood will not be disrupted and the higher density is supportive of transit opportunities.

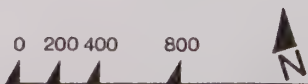
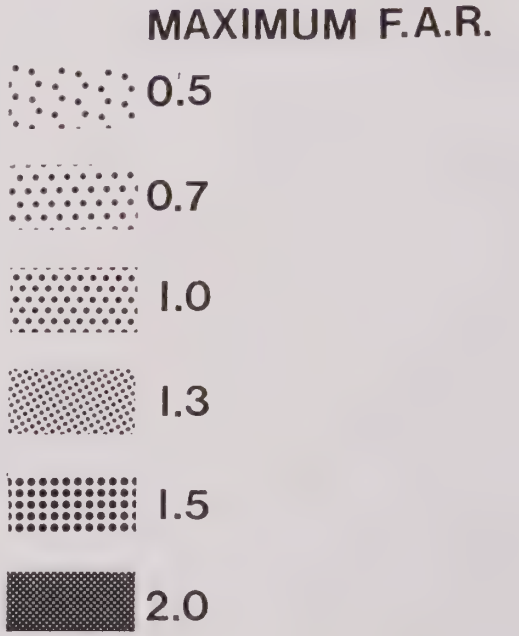
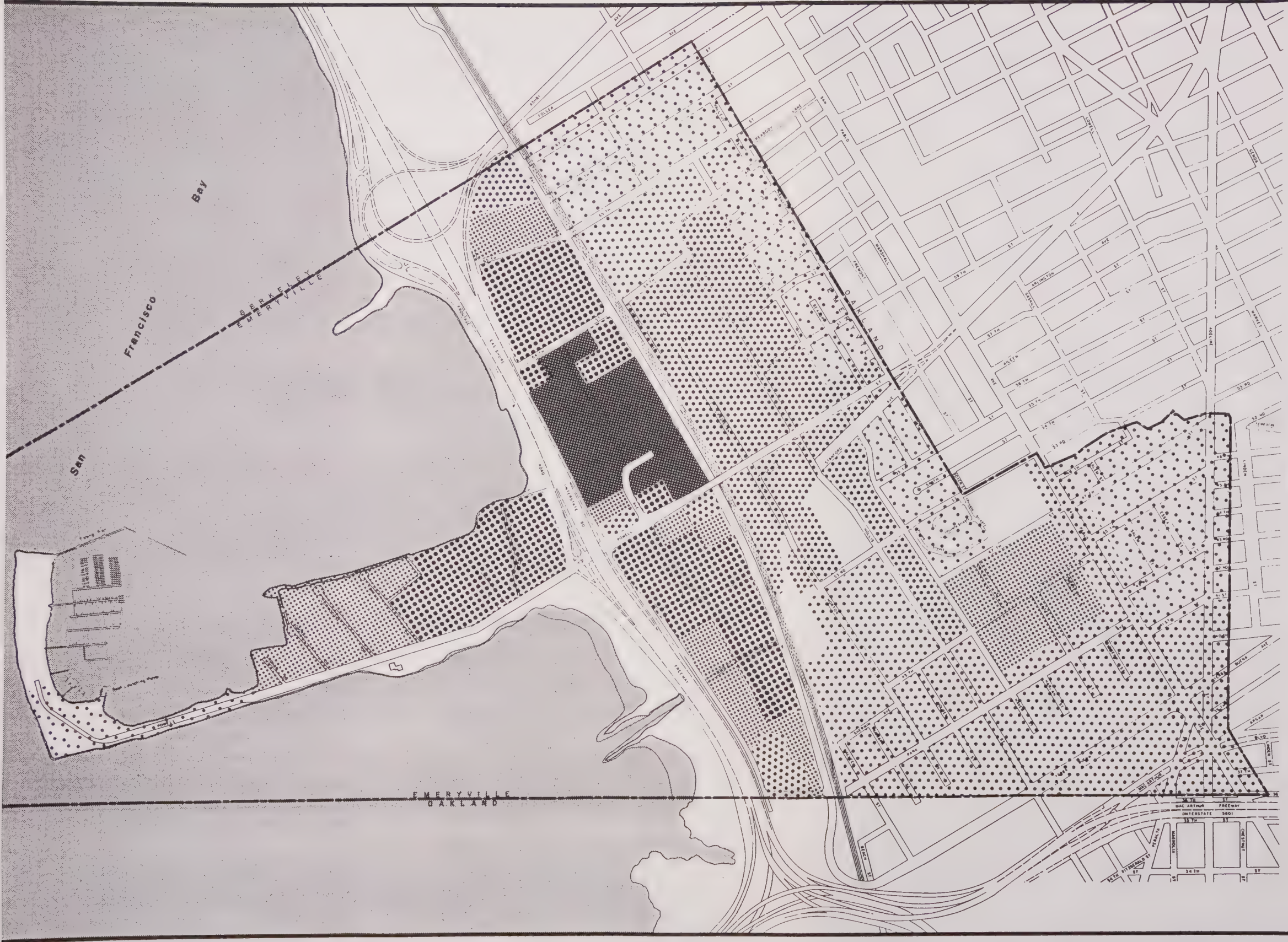
FIGURE III-14
LAND USE PLAN



- L LOW-MEDIUM DENSITY RESIDENTIAL ≤ 20 du/gross ac.
- M MEDIUM DENSITY RESIDENTIAL 20-45 du/gross ac.
- H HIGH DENSITY RESIDENTIAL ≥ 45 du/gross ac.
- GI GENERAL COMMERCIAL
- LI LOCAL COMMERCIAL
- CM OFFICE
- S MIXED USE
- F LIGHT INDUSTRIAL
- 1 CUSTOM MANUFACTURING
- 2 GENERAL INDUSTRIAL
- 3 OPEN SPACE
- P PARK
- PB PROPOSED PARK
- F PUBLIC BUILDING
- S FIRE STATION
- S SCHOOL
- 1 ALTERNATIVE LAND USES (SEE "OPTION AREA" POLICIES)

EMERYVILLE
GENERAL PLAN
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FIGURE III-15
BUILDING INTENSITY



EMERYVILLE
GENERAL PLAN
SEDWAY COOKE ASSOCIATES

7. Medium residential densities shall be preferred, whenever possible, along transit routes and arterials; near activity centers such as recreational areas and the civic center; and as part of mixed use developments. Within the City's large-scale mixed use projects, (parcels in excess of 200,000 square feet and in single ownership), medium density housing should constitute a minimum of 20% of the gross floor area of the building(s).
8. The City shall review residential development projects to ensure that the housing offers a quality living environment and complements surrounding neighborhood character. Appropriate criteria for evaluating design include:
 - Relationship of the project to the design, appearance, and form of adjacent structures.
 - Provision of adequate on-site usable open space where feasible.
 - Relationship of the on-site open space to the citywide open space system.
 - Opportunities to use passive solar energy systems and protect such opportunities for surrounding uses.
 - Exposure of all units to natural light and avoidance of significant reductions in the amount of light falling on adjacent buildings and open space.
 - Incorporation of concepts of security by promoting design of open spaces, parking lots, paths, play areas, and other public spaces such that continuous surveillance by residents or users is permitted; by siting buildings and entries to facilitate a sense of personal safety; and by designing lighting and landscaping to reduce opportunities for crime to occur.
 - Provision of sufficient access for emergency responses.
 - Incorporation of a variety of housing types.
 - Provision of transitional buffering from different land uses in order to achieve better livability, aesthetics, and overall neighborhood cohesion.

Commercial

9. Three commercial categories are established to meet the community's demand for local retail and service needs.

General Commercial. This category is intended to accommodate a diverse range of commercial activities, including food sales, repair services, personal services, general retail sales, financial and real estate services, wholesale sales, automotive service. This category includes strip commercial development along predominantly automobile-oriented travel routes, small offices, and community shopping/office complexes. Examples of locations where such classification is appropriate include Powell Street and San Pablo Avenue.

Office Commercial. This category is intended to accommodate commercial activities conducted primarily in offices. Commercial uses appropriate for this category include administrative and professional offices; business support service; financial, insurance, and real estate services; and medical services.

Local Commercial. This category is intended to meet the retail and service needs of residents and employees in the immediate vicinity. Typical uses include small, localized businesses within walking distance of their "market areas." Such convenience facilities might include eating and drinking establishments; food and beverage retail sales; limited personal medical and repair services; and retail sales.

10. Small convenience retail businesses, in addition to those proposed for the local commercial district, should be permitted in other land use districts as well, to provide goods and merchandise to uses within a block or two. Care must be taken, however, to ensure that these businesses are designed and located to complement, not conflict with, each adjoining uses. Conflicts result when such uses attract traffic or become an obtrusive visual element not in character with the surrounding uses.
11. In addition to the above districts, which are intended to serve primarily local retail and service needs, the regional retail district is created to recognize that there are locations in Emeryville appropriate for establishments selling a wide variety of merchandise that attract customers from a regional market area. This category, which would permit businesses selling general merchandise, apparel, furniture, and various specialty items, should be permitted only where there is convenient freeway access.
12. The City Center in the Bayfront area should become a social, retail, and entertainment focal point. Because pedestrian activity contributes to the vitality of an area, retail and pedestrian-oriented uses should be required in street-level space.
13. Office uses should be a primary use along the east side of Interstate 80 and along Hollis Street across from the proposed Hollis Street Park.

Industrial

14. Three industrial categories are defined to reflect the diversity of industrial activities within the City.

General Industrial. This category is intended to encompass a diverse range of industrial activities, including manufacturing, processing, assembly, fabrication, wholesale, and heavy commercial uses. Such activities may require open air storage of raw or semi-refined products.

Light Industrial. This category is defined to encompass a narrower range of industrial activities than permitted in the General Industrial category. It is intended to accommodate minimum-impact light industrial types of activities, including manufacturing, processing, assembly, fabrication, research and development, wholesale, and heavy commercial uses. Appropriate uses may include production of furniture, electrical equipment, clothing, pharmaceuticals, business machines, etc., provided these types of activities do not have extensive external effects in the form of noise, dust, glare, or odor.

Custom Manufacturing. This category is intended to provide space for a specialized type of light industrial activity, best characterized as "small-scale cottage industries." Uses tend to be smaller in scale than those under the Light Industrial category and include the manufacture, fabrication, or assembly of small-scale precision equipment or products such as cameras, scientific instruments, art objects, and custom clothing. Other typical uses include small printing and publishing concerns. One of the purposes of creating this category is to encourage development of a light industrial district between the general industrial and residential districts.

15. The general industrial district should be confined to the existing manufacturing/wholesale area north of 64th Street. The operational characteristics of uses in this district could create adverse impacts on surrounding uses if permitted elsewhere.
16. Research and development activities should be conditionally permitted in the light industrial district. Approval of research and development uses should be based on adequate assurance to the City that such uses would not expose the general public to hazards from radiation, toxic substances, chemical wastes, and other products and by-products.
17. The production of arts and crafts shall be considered a manufacturing activity and shall be permitted within the light industrial and custom manufacturing districts. Where feasible, artists should be permitted to live within their work space.
18. The Santa Fe property in the Southern Border represents a unique opportunity to design a high-quality, cohesive development project, because it is a large site and is under single ownership. The City should encourage the property owner to develop the site as a planned development in accordance with policies and standards outlined in the Community Design Element. A variety of light industrial activities could be accommodated here, including those which wish to relocate from other sites in Emeryville. Because of the site's visibility and high accessibility, the area also should be considered as a prime location for regional retail.

Public/Quasi-Public

19. A public/quasi-public district is created to designate approximate locations for public facilities such as schools, parks, fire stations, other public buildings, and utility facilities.
20. Public and quasi-public uses, because they attract high numbers of people to their facilities, should be located in areas with lower risks of seismic, geologic, and flood hazards.
21. The southern shoreline of the Peninsula is part of a sensitive natural resource. The City shall encourage this area to be used for open space. The City shall investigate the extent of public trust interest on privately owned property fronting the Bay and establish the appropriate uses for the land. Such uses should not permit long- or short-term environmental degradation of the ecologically sensitive Emeryville Crescent; allow public access to the shoreline; and incorporate and maintain the continuity of proposed pedestrian and bicycle trails

along the shoreline. At the conclusion of the public trust study, a general plan amendment may be considered.

Mixed Use

22. A mixed use district is provided to encourage a mix of different land use types in a planned and coordinated development program. Provided that the uses are properly sited and designed, this designation would promote combinations of residential, commercial, and industrial activities within the same vicinity and even in the same building. Hotels would be permitted within this land use classification. These areas should encourage a high level of social interaction and pedestrian activity, and permit relatively high densities.
23. Hotel uses shall be restricted to mixed use districts in the Bayfront and in the Peninsula.

Land Use Compatibility

24. Table III-21 should be used as a general guide to evaluate the compatibility of adjacent uses. Uses separated by large transportation facilities, such as a road or railroad tracks, or by open space should be considered by the City in evaluating development proposals against Table III-21. The effect of these "separators" would likely minimize the adjacency impacts that would be expected if they were abutting one another or in close proximity.
25. In situations where there is a question regarding the compatibility between two uses/intensities, the lower-intensity use shall be used to judge compatibility.
26. Compatibility guidelines should be established to protect adjacent uses from the emission of noise. Table V-3 in the Noise Element in Chapter V defines acceptable and unacceptable noise exposure levels for the different land uses.
27. Landscaping and setback guidelines should be established to create buffers and to delineate the different neighborhoods and districts. The Community Design Element offers policies and standards to diminish visual conflicts and create a more visually harmonious relationship within the City's development pattern.
28. The residential neighborhoods in the North End and the Triangle should be protected by discouraging truck traffic through the streets, by carefully reviewing the uses surrounding the residential area and screening or buffering activities that have harmful visual or environmental effects, by eliminating incompatible uses within the neighborhood, and by encouraging public and private improvements to enhance the identity, cohesiveness, and livability of the area.

Option Areas

29. The City should permit regional retail uses in areas with adequate freeway access and where the typically high traffic volumes associated with such retail uses can be accommodated on local streets. If there is sufficient market interest, regional retail is an alternative to the use designated on the Land Use Plan in three areas: the Bayfront area south of Temescal Creek, the Bayfront area south of 65th Street to where 62nd Street would be if it were extended westward into the Bayfront, and along Yerba Buena Avenue in the Southern Border.

TABLE III-21: LAND USE COMPATIBILITY

	<u>Res.</u>	<u>Com.</u>	<u>Off.</u>	<u>Mixed Use</u>	<u>Light Ind.</u>	<u>Custom Mfg.</u>	<u>Gen. Ind.</u>
Residential	C	P	P	P	I	P	I
Commercial	P	C	C	C	C	C	P
Office	P	C	C	C	C	C	P
Mixed Use	P	C	C	C	P	P	P
Light Industrial	I	C	C	P	C	C	C
Custom Manufacturing	P	C	C	P	C	C	C
General Industrial	I	P	P	P	C	C	C

C = Uses generally are compatible.

I = Uses generally are incompatible.

P = Uses may be compatible subject to conditions that may be imposed as a result of City review.

30. The Hollis Street Park should occupy a prominent location in the heart of the City and at the intersection of many of the proposed pedestrian corridors, as generally shown in Figures III-10, III-14 and III-22. It is recognized as one of the few--if not only--locations that is sufficiently large, undeveloped, and centrally located to accommodate a community park for the City. An appropriate alternative use designation for this site should be mixed use with public open space and public buildings such as a community meeting room and a child day care facility.
31. Because of the pendency of an investigation into the extent of the public trust interest on privately-owned property fronting the Bay, this general plan amendment makes no changes to the allowed land uses along the water at this time. Option Area 3 will be further studied upon completion of the Public Trust study.

Implementation

1. Revise the City's existing zoning ordinance to reflect the more detailed land use categories and policies presented in this General Plan (City). At least one "land use district" will be needed to address each of the land use classifications in the Plan. Special attention should be given to the Plan's mixed use classification in order to provide sufficient flexibility to accommodate a variety of uses and a

coordinated development plan. A common approach to ensuring this type of comprehensive planning is to use a planned development district which requires submittal of conceptual plans that evaluate the entire site and permits flexibility in the application of development regulations. The Santa Fe land in the Southern Border is another logical candidate for designation as a planned development district.

2. Exercise the Emeryville Redevelopment Agency's authority to rehabilitate and revitalize blighted and deteriorating areas (City Redevelopment Agency). Much of the City already lies within the Redevelopment Agency's project area. Within these areas, the Agency can make physical improvements for the public benefit. There are a number of ways to make such improvements, ranging from land acquisition to construction to financial assistance for private developers. An appropriate area for which such powers should be directed is the area south of 43rd Street at the southern end of the Triangle. This area has the potential to become a desirable activity center (see the Community Design Element), but first requires both physical enhancement and economic development. Redevelopment Agency assistance can be combined with other programs described in the Economic Development Element to redevelop the area. Consider applying for CHFA's Development Loan Program which provides partial reimbursement for up-front costs associated with the development of housing projects.
3. Designate areas where specific plans may be desirable (City). A specific plan, which is authorized by Government Code Section 65450, shall include all detailed regulations, conditions, programs, and proposed legislation as necessary to implement the General Plan. Prepared by the City, these plans are regulatory in effect and may replace the prescribed zoning for the planning area. Consequently, the specific plan must describe the location of land uses; standards to regulate height, bulk, and setback limits; the location of existing or proposed streets and the standards necessary for their construction and maintenance; standards for construction, and management of natural resources; and implementation provisions to carry out the regulations, programs, public works projects, and financing. The costs of developing a specific plan can be assessed to those builders and developers who will benefit from it. Appropriate areas to be designated for specific plans include the mixed use area north of Powell Street in central Emeryville and the Santa Fe lands in the Southern Border.
4. Consider the desirability of implementing a new building block zoning approach (City). Building block zoning replaces conventional zoning, which rigidly applies a limited number of zoning districts, with a system which recognizes that a wide range of districts with different combinations of permitted uses, building forms, heights, floor area, setbacks, and open space requirements are necessary to respond to the varied conditions found in urban areas. Thus, such a system would be appropriate for encouraging development of mixed use areas, for allowing higher intensities around activity centers and transit corridors, and for recognizing the special features that give areas along Park Avenue and Horton Street a desirable scale and their historic flavor.

Building block zoning regulations are split into three major parts: a use unit, a development unit, and a special area unit. The use unit defines what uses or combinations of uses are permissible and allows the community to make this selection independent of building form, height, coverage, density, or other

physical characteristics of development. The development unit specifies how uses can be developed. Specifications on the various development characteristics again are selected independently. A series of schedules sets ranges and limits for variables including density, lot size, building form, floor area, height, coverage, setback, and open space. These are presented in tables, and selection can be made from each of the tables to create a set of regulations uniquely suited to a specific situation. At a minimum, each parcel of land is subject to use unit plus development unit regulations which apply only to it and to other parcels which are similarly situated. As dictated by special circumstances, a parcel also may be subject to special area regulations. The special area unit is similar to many overlay or additive zones already used in zoning ordinances. It applies to sites that have geologic, topographical, biological, scenic, or other unusual constraints or values. Additional standards are written for these sensitive areas.

G. COMMUNITY DESIGN

Introduction

Community design is a process of designing an urban setting comprehensively. It concentrates on the overall visual impressions and functioning of the entire City, without dictating the design of individual buildings. While a main function of the Housing and Land Use Elements is to promote better utilization of City assets by designating future densities and particular uses, the function of community design is to unify all elements in a meaningful three-dimensional structure. Community design is expressed primarily through the arrangement of buildings and City spaces. The enjoyment, contentment, and pride of the community springs mainly from these relationships and connections, from the quality of the City spaces, and from the comprehension of the City organization, landmarks, and focal points within it. To make this process viable, community design must influence new construction, preserve distinctive buildings, integrate landscaping in design requirements, and encourage diversity by accommodating and interrelating as many urban functions as possible. In this way the future City will not be a product of piecemeal decisions made around a few individual buildings, but a coordinated organization with the visual and functional interrelationships of spaces and buildings fully considered.

The primary concern of Emeryville's Community Design Element is to shape the City's future physical and spatial form at several levels: regional, City, and site. At the regional level, the City structure is organized to reflect its relation to surrounding communities. At the citywide level, the City's historic spatial organization is preserved and reorganized, where necessary, to serve as the basic pattern for new development. Finally, at the site level, attention is turned toward particular prominent sites which have the role of major activity centers for future development.

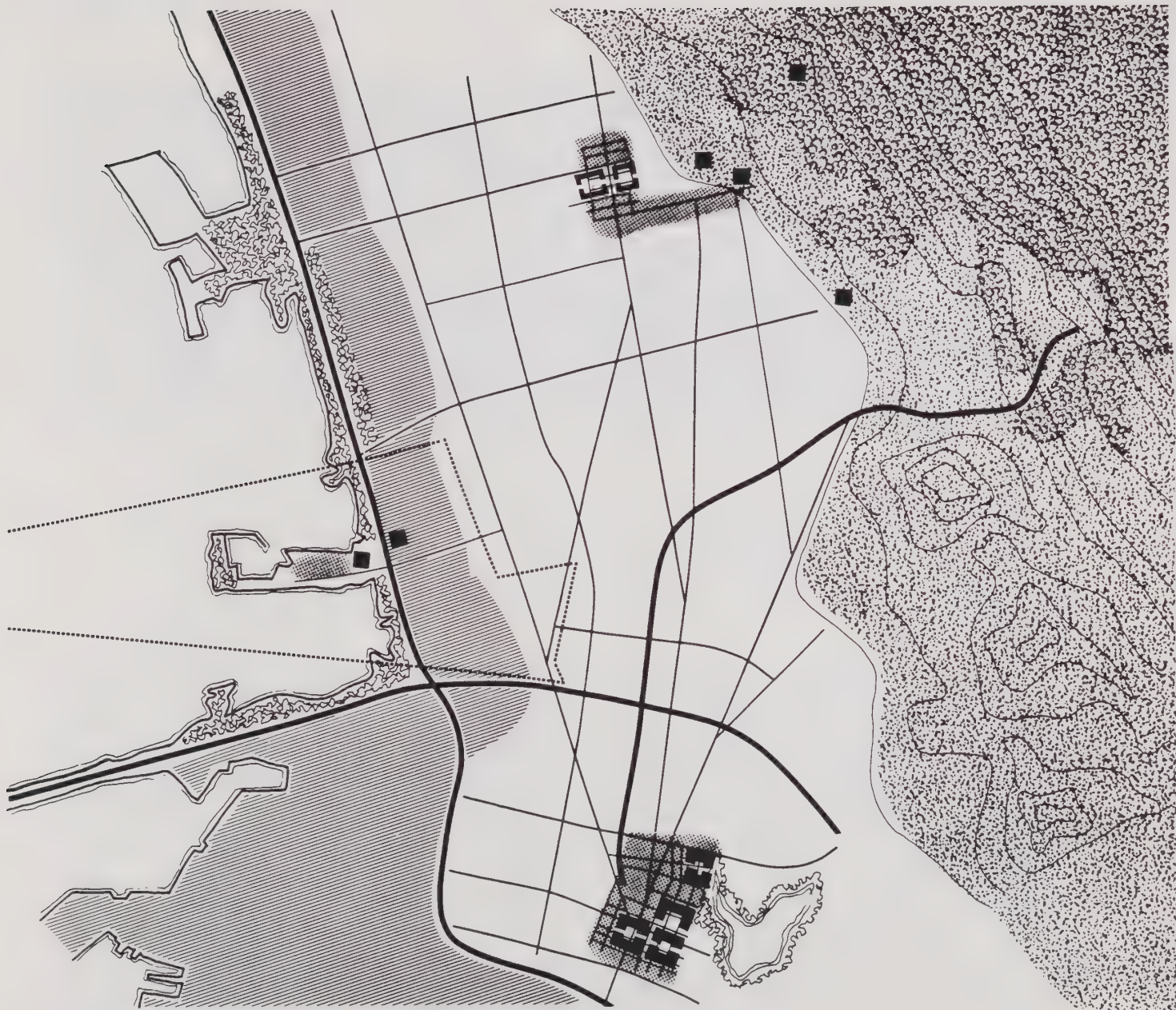
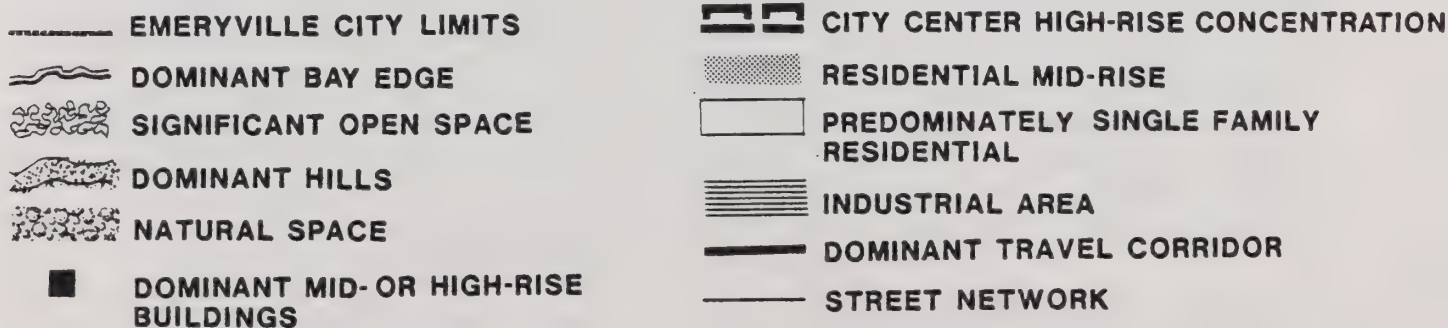


Figure III-16
REGIONAL PHYSICAL SETTING



EMERYVILLE GENERAL PLAN

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Urban and Environmental Planners and Designers

Regional Setting

Emeryville is centrally located in the East Bay between Berkeley and Oakland and as such is integrally related to the region's image. As shown in Figure III-16, this part of the East Bay is framed by two dominant natural elements: the hills to the east and the Bay to the west. The majority of the area between these natural features is characterized by low-rise housing areas, accentuated intermittently by landmarks like the Claremont Hotel, Lawrence Hall of Science, and the U.C. Berkeley Campanile. Prominent man-made urban elements of this setting, such as downtown Oakland, the maritime facilities of the Port of Oakland, Emeryville's waterfront development, and downtown Berkeley, are easily recognizable and help to define the region's image.

The City historically has been an integral and cohesive part of the East Bay physical setting. Between the waterfront and San Pablo Avenue, Emeryville's early development pattern blended in form and appearance with the low-rise industrial and housing areas that spread uniformly throughout the East Bay. A gridiron street system, with major streets running from the hills to the Bay (University, Ashby, etc.) and north-south connectors (San Pablo, Telegraph, etc.), provided organization and orientation to the development pattern. This physical setting was dramatically changed by the construction of the freeway system, which physically divided virtually all of the East Bay urban area from its waterfront. The extension of the East Bay waterfront lands into the Bay through landfilling further reduced the historic cohesiveness of the region, because the new lands had no organic, functional tie with the existing physical setting.

The relatively recent development on the Emeryville Peninsula, which has introduced a new building form to the physical setting of the East Bay waterfront, has had two effects. First, the building forms represented a significant break from the predominantly low-rise development pattern of the East Bay. As freestanding towers along the shoreline, these buildings are obvious landmarks from the major travel routes and help provide some orientation, but they are now out of scale and character with the surrounding areas. Second, the scale of the new structures is more representative of a major center than of a small community like Emeryville. The perception one has upon seeing these large-scale projects is that they define a large urban setting. Yet, as one enters the area, it becomes clear that the tall buildings are isolated and unrelated to any of the adjacent uses and activities. Thus, the new development creates an inappropriate image for Emeryville--or at least one that is now premature. In summary, the development decisions that have been made in Emeryville have not only affected the City but they also have begun to reshape the visual setting of the entire East Bay region.

Objectives

- A. Promote the image and character of Emeryville as a separate, unique identity within the East Bay while still preserving its role as an integral and cohesive part of the East Bay physical setting.
- B. Promote continuity of the historic regional physical setting.
- C. Coordinate open space concepts along the Bayshore with those proposed by other public agencies.

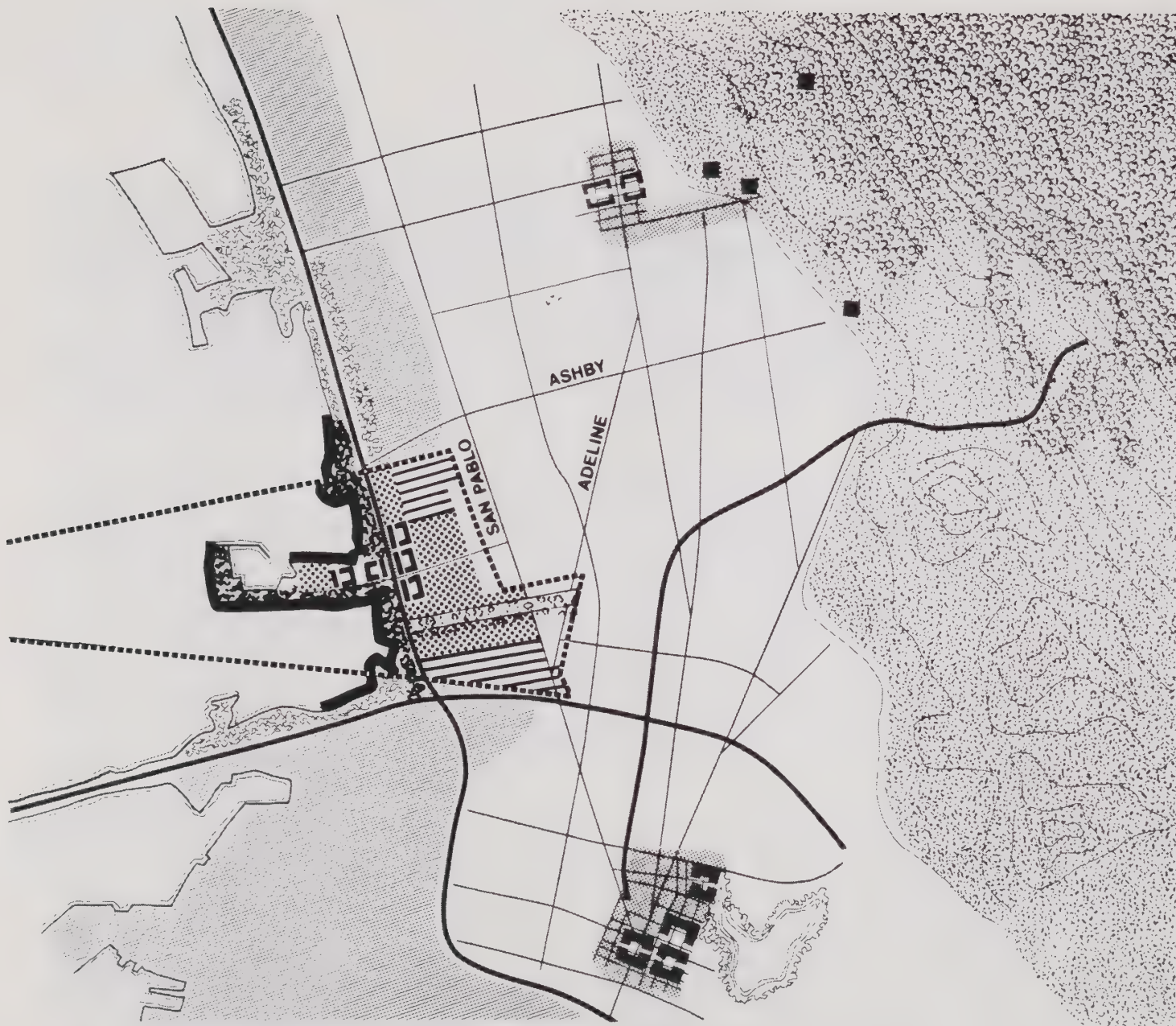
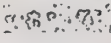
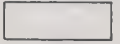


Figure III-17

EMERYVILLE'S FUTURE ROLE WITHIN REGIONAL PHYSICAL SETTING

- EMERYVILLE CITY LIMITS
-  PROMOTE CONTINUOUS OPEN SPACE ALONG BAY EDGE
-  FORM TEMESCAL OPEN SPACE CORRIDOR
-  DEVELOP EMERYVILLE CITY CENTER CONCENTRATION
-  ENCOURAGE MIXED-USE MID-RISE
-  PROTECT AND EXPAND LOW-RISE RESIDENTIAL AREA
-  DEVELOP INDUSTRIAL MID-RISE AREAS

EMERYVILLE GENERAL PLAN

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Policies

1. The City shall observe the guidelines set forth in Figure III-17 to ensure that its development proposals are sensitive and harmonious with the broader development pattern of the region.
2. The City in conjunction with Caltrans should improve major circulation corridors such as freeways and inter-City roads to provide easy access and clear orientation to Emeryville. This should be done by reconstructing major freeway nodes at Ashby, Powell, and MacArthur (see the Circulation Element) and by creating new "gateway" images for these areas (see Cityscape policies in this element).
3. The predominantly low- to mid-rise physical form shall be maintained in all portions of the City except in the future City Center and on the Peninsula. High-rise buildings should be restricted to areas generally shown in Figure III-18 in order to define and confine the City's major community and regional activity center. This new group of structures will enable Emeryville to have a strong regional identity.
4. Natural open space amenities shall be enhanced by promoting a continuous open space band along the Peninsula waterfront and along the shoreline extending north to Berkeley and south to Oakland.

Citywide Organization

Traditionally, Emeryville has been perceived as an industrial city with a small residential area. The primary physical composition of the City was determined by this basic land use pattern and by the gridiron street system. The presence of the railroad lines, and later the freeway, disrupted the street system and posed formidable physical barriers that divided Emeryville into three major subareas: the Peninsula, the Bayfront, and East Emeryville. Today, in each of these subareas, different land uses and physical forms exist that are not related to one another, either visually or functionally. East Emeryville has a rectangular street pattern and low-rise development; the Bayfront lacks an organized street system, and is dominated by large, bulky industrial buildings and open storage spaces; and the Peninsula contains new, virtually unrelated land uses like a marina, multifamily residential structures, and office buildings in a high-intensity, mid- to high-rise building form.

The City's identity is also poorly defined by the lack of clear borders. They roughly follow Ashby Avenue on the north, San Pablo Avenue and Adeline Street on the east, Interstate 580 on the south, and the Bay on the west. There are several key points from which to enter the City by car, but they are poorly defined or confusing, and they do not provide a point of orientation for people coming into Emeryville. Moreover, the only two streets which are continuous throughout the City are Powell and Hollis. Continuity is further impaired in the Bayfront and parts of East Emeryville, where the railroad lines and industrial uses have physically disrupted the traditional, more regular city block pattern. Presently, the most visually prominent features of Emeryville are due to the departure from traditional building heights. New development on the Peninsula and Bayfront encompasses housing and office structures 4-30 stories high. Amidst this contrast of physical scales, there is no sense of community identity. A City center does not exist; the old commercial strip

along San Pablo Avenue is underutilized; and the small shopping area on the Peninsula is inaccessible to most of Emeryville's citizens.

Emeryville's traditional physical structure is changing rapidly, and the City is becoming a collection of spatially disconnected activities. This process may be reversed by taking advantage of two major local resources: the City's size and its location. Emeryville's small size is advantageous because all presently segregated City subareas can be planned and designed as a part of a larger citywide scheme. With major parcels of redevelopable land, there are opportunities to develop a cohesive system of circulation, major land uses, open space, and activity centers. These functions should be organized to take advantage of the City's highly visible and accessible regional location and promote Emeryville as a city which offers a high quality of life.

The major components of community design on a citywide scale are identified below and policies addressing each component follow.

- Building form establishes the City's regional image, visual diversity, and neighborhood identity. This component addresses individual buildings but is most concerned with the image created by a collection of buildings and how they relate to surrounding areas. Important features used to control and influence building form include the height, shape, and size of buildings and the physical dimensions and spacing of city blocks.
- Cityscape defines the character and appearance of main travel routes: the distinction among City streets, blocks, and open spaces; and the connections of the natural environment and public parks to the landscaped City street system, pedestrian routes and public plazas. An important concept in designing a meaningful cityscape is that of continuity. Continuity refers to providing a coherent visual image. For example, a continuous street facade would be characterized by appropriate landscape, buildings that are of similar size and bulk, and blocks that are predominantly occupied by building frontages rather than parking lots, vacant lots, and open storage areas.
- Activity centers serve as focal points within City subareas and unify districts and neighborhoods.

Objectives

- D. Translate the existing and proposed land uses into legible and recognizable three-dimensional building patterns.
- E. Retain existing variations in building scale, and promote a small-city image in the old industrial and residential districts of East Emeryville.
- F. Permit new building scale in the Bayfront and Peninsula that provides a regional emphasis for a new City Center and related land uses.
- G. Transform the existing City building pattern, streets, buildings, and open space into a more integrated physical setting capable of producing a well-organized and exciting City environment that is experienced from "inside" the City streets, plazas, or open spaces.

- H. Preserve and reinforce the historic gridiron street system, and provide major organizing elements like City gateways, vehicular corridors, pedestrian-oriented corridors, City parks and open space, and focal points such as City plazas.
- I. Integrate the main City organizing elements (building form, street facades, and activity centers) to form a well-designed, functional and efficient environment.
- J. Promote a continuous Citywide open space network which physically connects the three main City subareas and visually links residential neighborhoods with employment and commercial districts.
- K. Connect the open space network with the main pedestrian corridors.

Policies

Building Form

- 1. Buildings and the cumulative image they create should reinforce the character and level of activity appropriate to different areas of the City. New buildings should be visually harmonious with the existing development scale and style. Figure III-18 should serve as a guide to the City in reviewing development proposals with respect to building form.
- 2. The City shall protect the existing character and low-rise scale of residential areas in the Triangle and the North End, which consist of predominantly detached single-family homes on small lots. This should help to retain the appearance of this small-scale residential community, distinct from other nearby land uses.
- 3. The City should permit new housing structures in the North End between 47th Street and Park Avenue. New development should consist of large low-rise structures. In order to define city blocks, the development should have a continuous street facade, uniform setbacks, and interior open spaces. Its visual relationship to the existing brick buildings along Park Avenue should be strengthened through the use of similar building materials and structures of similar height.
- 4. The San Pablo commercial strip should be restored with infill development of small low-rise buildings that form a continuous street facade. Restoration and upgrading of this street should serve not only retail and commercial needs of adjacent residential areas but also support the sense of a local neighborhood by reinforcing the prevailing scale of the row of shops and services.
- 5. The existing brick buildings along Park Avenue should be retained and restored to preserve and enhance the historic value of this street. No building additions should exceed the existing height within the block; the existing continuous street facade should be preserved; and brick should be used as the predominant building material in new construction.

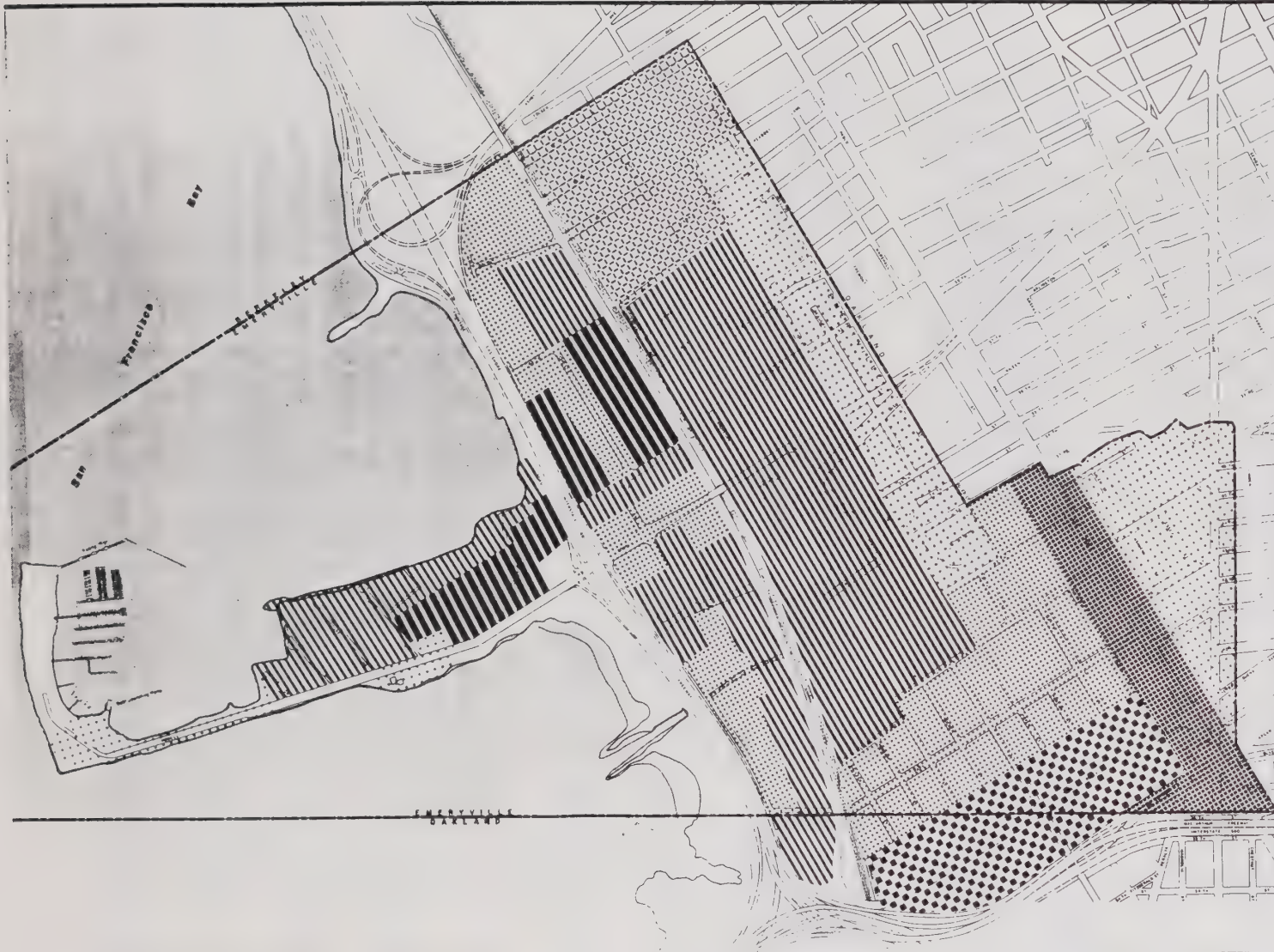


FIGURE III-18
BUILDING FORM

BUILDING SCALE	BUILDING HEIGHT	DOMINANT BUILDING PATTERN
	HIGH-RISE (7-13 STORIES)	LARGE BUILDINGS; CONTINUOUS STREET FACADE WITH UNIFORM SETBACK AT GROUND LEVEL; UPPER FLOORS WITH VARIABLE SETBACKS
	MID-RISE (4-6 STORIES)	LARGE BUILDINGS; PRE-DOMINANTLY CONTINUOUS STREET FACADE WITH UNIFORM SETBACK AT GROUND LEVEL; UPPER FLOORS WITH VARIABLE SETBACKS
	LOW-RISE (TO 3 STORIES)	LARGE BUILDINGS; PRE-DOMINANTLY CONTINUOUS STREET FACADE WITH VARIABLE SETBACKS
	LOW-RISE (TO 3 STORIES)	LARGE BUILDINGS; DISCONTINUOUS STREET FACADE WITH UNIFORM SETBACKS
	LOW-RISE (TO 3 STORIES)	LARGE BUILDINGS; CONTINUOUS STREET FACADE WITH UNIFORM SETBACKS
	LOW-RISE (TO 3 STORIES)	SMALL BUILDINGS; CONTINUOUS STREET FACADE WITH UNIFORM SETBACKS
	LOW-RISE (TO 2 STORIES)	SMALL DETACHED BUILDINGS; VARIABLE SETBACKS

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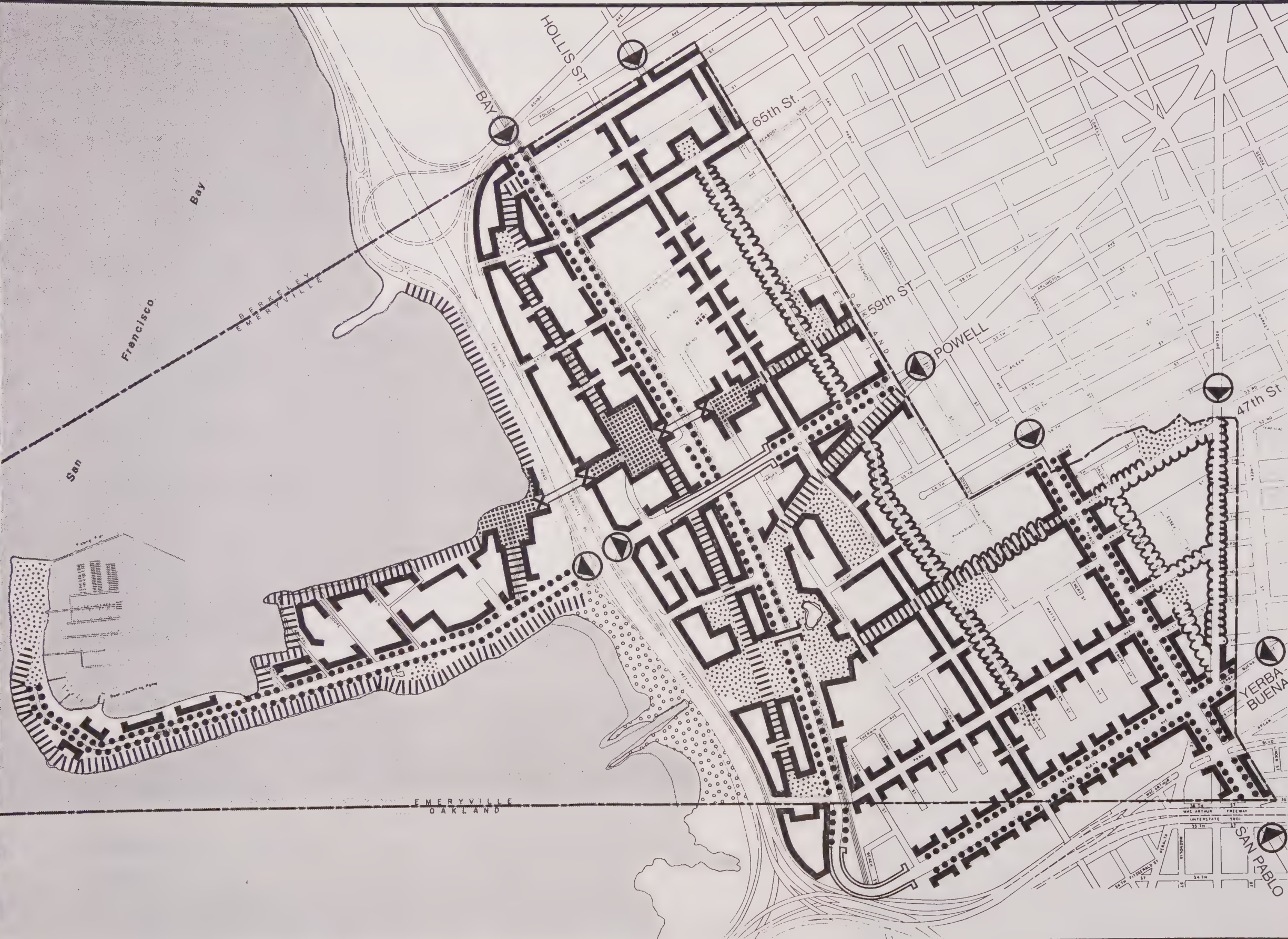
6. The present undeveloped area along Yerba Buena Avenue should be organized along a regular gridiron street system that relates to the existing street pattern. The new city blocks may vary in length and accommodate large buildings forming a continuous street facade. The main orientation for these buildings should be towards Yerba Buena Avenue and Hollis Street. The predominant building height should be the same as that along Park Avenue, and building materials should be similar to the Park Avenue brick buildings. These guidelines are proposed to retain the area's distinctive and uniform building scale and to identify clearly the image of this area from the freeway and main thoroughfares.
7. The rehabilitation of old industrial structures and the addition of new industrial uses should be encouraged in the Central District north of 64th Street. Industrial structures located within this area should be permitted to take a form which distinguishes them from the nearby residential area or the proposed central mixed use area. Large low-rise industrial buildings should be developed with uniform setbacks. New development should preserve the existing street system and city block pattern.
8. In order to reinforce the mid-rise building pattern in the Central District, the existing brick buildings along Horton Street should be preserved, and large industrial structures, like Westinghouse, ITT Grinnell, and PG&E (see further policies and diagrams in "Activity Centers" policies), should be rehabilitated and reused for a mixture of uses and a variety of work spaces and outdoor areas. New buildings should be related to existing structures through the use of similar building materials and building heights. All buildings should form a continuous street facade along Hollis and Powell Streets.
9. The new building pattern in the Bayfront area should relate to the new street system, and building scale should vary according to location in order to protect views.
 - High-rise structures should be located in the central portion of the area to accentuate the City Center and region-oriented activities. In order to minimize changes to the existing skyline and reduce obstruction of views to the Bay or hillsides, all high-rise structures should be located in the proximity of existing large-scale development.
 - A low-rise building scale should be developed along the most of freeway frontage, except as noted above, to protect Bay views from buildings further inland.
 - A mid-rise building scale should be developed primarily along the eastern edge of the Bayfront.
 - Hotels in areas designated for both mid-rise building scale and mixed use may be permitted to develop as high-rise structures.
10. The existing low- to mid-rise building scale in the central portion of the Peninsula should be preserved and extended along the northern side to provide a transition between the high-rise structures and the waterfront. High-rise structures should be confined to the vicinity of the existing concentration. The low-rise building profile should be maintained in the area around the existing

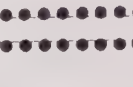
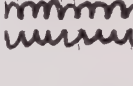
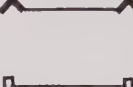
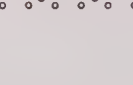
marina, where all new uses should be oriented toward the water, and where public access to the waterfront shall be assured.

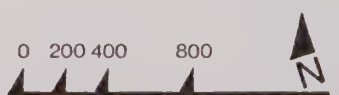
Cityscape

11. The transportation system, open space, and buildings should be combined into a pleasing, cohesive, highly desirable urban environment. The key principles for integrating these various elements are illustrated in Figure III-19.
12. Key entrance points to the City should be established as shown in Figure III-19. The physical appearance of these "gateways" should be defined through height/bulk regulations for adjacent buildings, removal of existing visual clutter, and construction of distinct streetscape features like special paving, street lighting, and significant tree planting.
13. The visual quality of the City should be enhanced by providing a strong and continuous building facade along Interstate 80, and upgrading the image of Adeline, San Pablo, and Yerba Buena with continuous street facades and extensive tree planting.
14. Major City travel corridors should be established or improved, if necessary, to include a network of paths and streets which separate the major through-traffic streets from the open space system and associated pedestrian/bicycle activities. This separation should help create a visual hierarchy of streets and paths that identifies key corridors and indicates their physical structure.
15. The City's major boulevards, Bay, San Pablo, Yerba Buena, and Powell, should have a formal appearance created by establishing continuous and regularly spaced city blocks, street-oriented facades, tree plantings limited to a single variety, and uniform paving and ground cover material (see the Landscaping Element for additional guidelines).
16. A network of pedestrian-oriented streets and corridors should be created by using and expanding the existing City street system to serve as connectors between the City's natural open spaces, public parks, and plazas and courts.
17. Residential streets and pedestrian corridors should be designed to create an informal appearance. This image may be achieved with varied low-rise structures, a variety of randomly spaced trees and shrubbery which extends into the private building frontages or public landscaped open spaces and parks.
18. The City should retain and develop the historic warehouse-industrial image of Hollis Street and Park Avenue. Existing buildings should be upgraded and new ones should be introduced to form a continuous street facade of buildings with similar height and bulk. This should be further accentuated with use of materials like brick and glass, and more traditional building details.
19. Major open spaces and urban plazas should be organized along two main pedestrian-circulation corridors. The first corridor should connect future water-oriented uses on the Peninsula, the City Center in the Bayfront, and the Westinghouse complex in East Emeryville. The second corridor should connect Temescal Creek park in the Bayfront with the proposed Hollis Street Park, and the residential area in the Triangle.

FIGURE III-19
CITYSCAPE



-  PROVIDE CONTINUOUS STREET FACADE
-  PROVIDE STRONG BUILDING FACADE
-  PROVIDE FORMAL STREET TREE PLANTING
-  PLANT STREET TREES AS VISUAL CONNECTORS/BUFFERS
-  ACCOMMODATE PEDESTRIAN-ORIENTED MOVEMENT
-  PROVIDE MAJOR CITY OPEN SPACE
-  ESTABLISH MAJOR CITY PLAZAS
-  PROVIDE PEDESTRIAN/BICYCLE OVERPASS
-  UPGRADE EXISTING AND LOCATE NEW STREET OVERPASSES
-  ESTABLISH MAIN CITY GATEWAYS
-  PROTECT EXISTING NATURAL HABITAT



EMERYVILLE
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20. Safe and pleasant bicycle/pedestrian overpasses should be constructed over the freeway and railway to connect the main pedestrian corridors. These overpasses are highly visible and represent elevated public areas serving as important vistas and orientation points.
21. When future traffic conditions require reconstruction of the existing Powell Street overpass, aesthetic improvements should also be made to the overpass. This is desired because the overpass will become highly visible when Bay Street is extended under it and the Westinghouse area is rehabilitated. Improvements to the structure, such as painting, installing new light fixtures or other aesthetic details, may be accomplished without significant additional expenditures at the time that improvements are required to improve traffic flow.

Activity Centers

Activity centers are focal points of high-intensity, people-oriented activities. They are typically found at important points along the City's circulation and open space networks, and provide a connection between different predominantly single-use districts and neighborhoods. Activity centers are generally composed of different mixed-use buildings organized around a public open space that relates to the surrounding uses and helps create a coherent and distinct physical image.

Emeryville's existing public and commercial functions are dispersed throughout the City and isolated from each other. Existing buildings focus primarily on a single use: office towers on the Peninsula and large industrial structures in central Emeryville. Although they fulfill their basic single functions, these concentrations create isolated environments that cannot be combined easily to generate diverse activities.

Three different areas of prime importance for the City's future development have been chosen to illustrate how such centers should be designed. These areas are the Westinghouse complex, part of the PG&E site in central Emeryville, and a portion of the Triangle neighborhood around the AC Transit depot. Secondary activity centers have been identified throughout the remainder of the City, connecting these primary centers along transportation and open space corridors.

Objectives

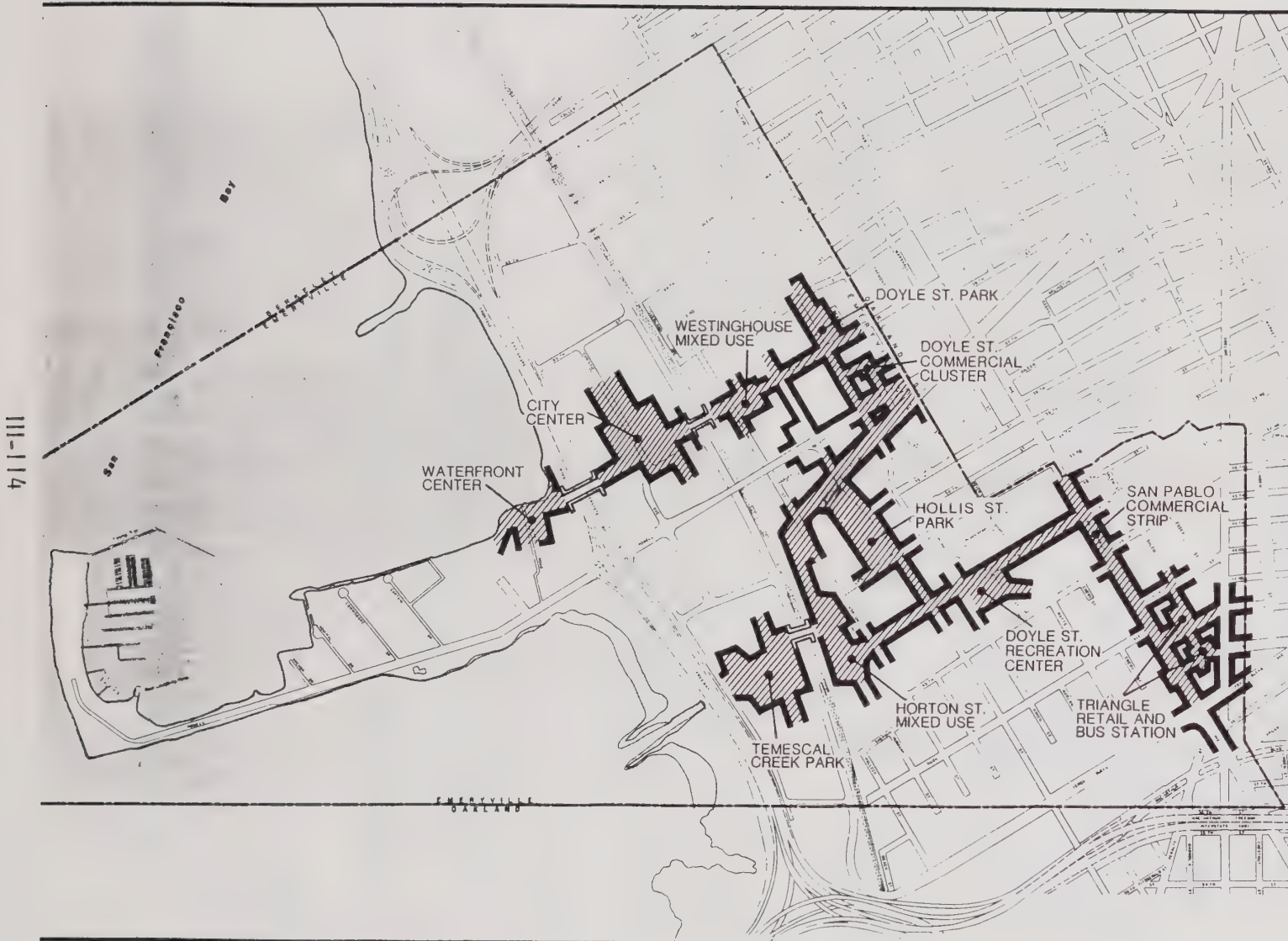
- L. Create activity centers as focal points of public life throughout the City, and relate them to the circulation and open space network.
- M. Develop activity centers as a mixture of land uses and functions integrated with public open space.

Policies

General

- I. The City should establish main activity centers in key locations throughout the City, as shown in Figure III-20, and link them to the proposed citywide circulation network, providing for:

FIGURE III-20
EMERYVILLE
ACTIVITY CENTERS



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EMERYVILLE
GENERAL PLAN
 SEDWAY COOKE ASSOCIATES

- interconnection of all activity centers with the main pedestrian and bicycle paths.
 - public transit stops to secure necessary access from distant areas and to offer another alternative to private automobiles.
2. Each activity center should become a distinct focal point in Emeryville's city structure by utilizing its location and size to:
 - encourage different mixes of uses such as office, retail, housing, support services, etc.;
 - encourage development which serves the functional purpose of the activity center as a whole, rather than individual buildings; and
 - rehabilitate and incorporate significant old structures as part of the new development.
 3. Each plaza or major open space should be designed as a future City activity center, acting as a place for social interaction, recreation, and entertainment. Visually similar yet varied building facades, vegetation, floor design, lighting, and signage should support this concentration of activity. As focal points, it is the City's desire to encourage the use of these areas for displays of art. The City should also investigate the desirability of requiring major developers to provide art displays or to contribute to a fund for the permanent display of public art in designated plazas and major open spaces.

Westinghouse-ITT Grinnell Activity Center (see Figure III-21)

4. The area bounded by the railroad right-of-way and 62nd, Hollis and Powell Streets should be rehabilitated and developed comprehensively as a single planned development.
5. The area should be developed and designed as one large city block, consisting of continuous street facades situated around an interior court. The existing citywide gridiron block pattern should extend into the court area as pedestrian pathways.
6. All existing street rights-of-way within the block (59th, Peladeau, and Landregan) should be retained as internal pedestrian connectors. Landregan should also offer minimal vehicular access from Horton Street and emergency vehicle access (through the garage structure) to 62nd Street.
7. The main entrances, into the mixed use area should be located at 59th Street, Landregan Street, and at the future City Center pedestrian overpass connection. All of these entrances should lead into a central court.
8. The central court in the middle of the block should be at the intersection of all pedestrian movements. It should be rectangular in shape and accentuated by continuous public passage ways around the court, arcades on the ground floor and walkways on the upper floors. The open court area should be designed to accommodate open air public activities and serve as a public meeting place.

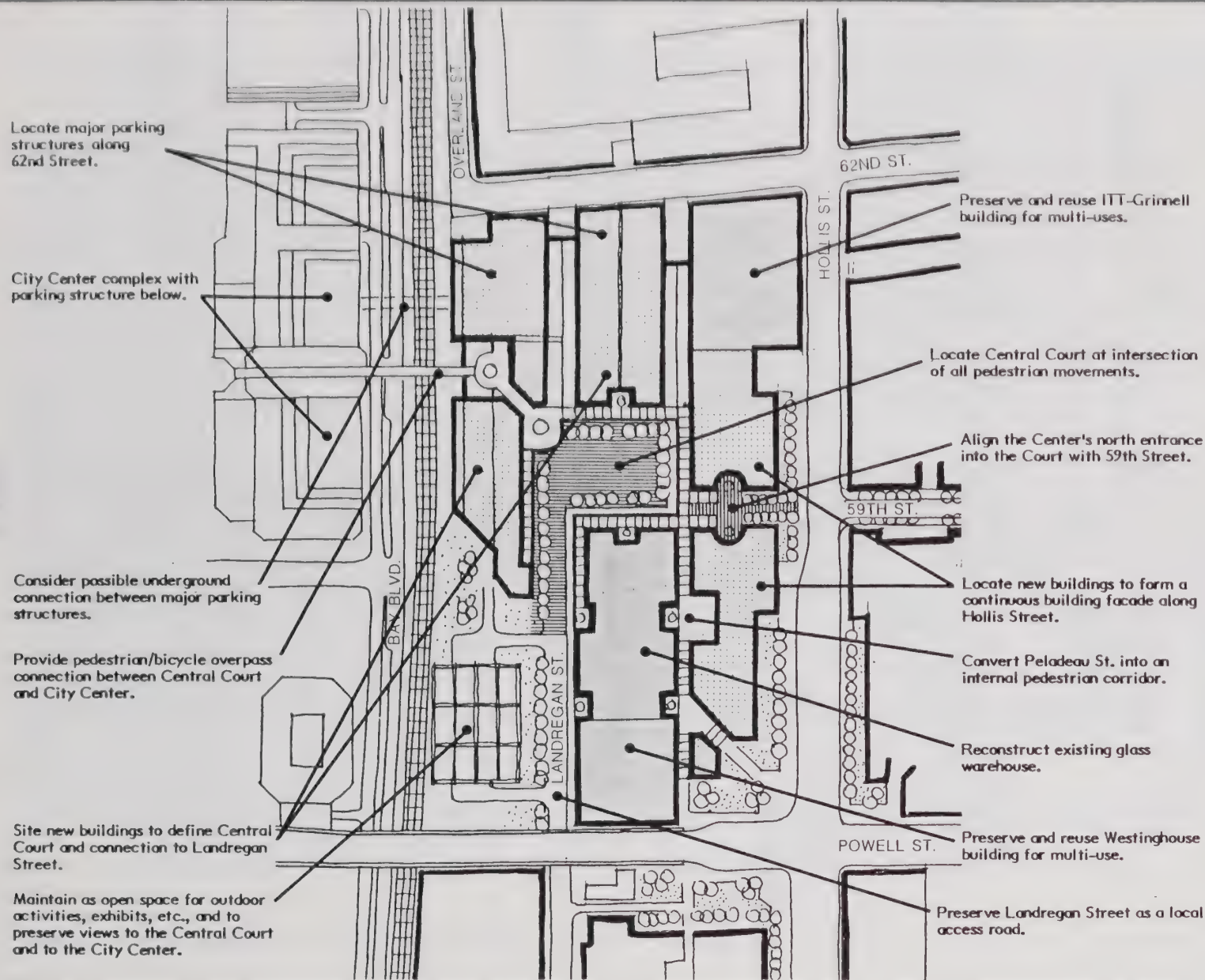


FIGURE III-21
WESTINGHOUSE COURT
ACTIVITY CENTER

EXISTING BUILDINGS

PROPOSED STRUCTURES

9. Buildings should be developed so that they create a continuous street facade along Hollis and 62nd Streets, marked by uniform height.
10. All buildings within the block should be designed as multi-functional structures. All buildings around the court should have public-oriented uses such as retail and services on the ground floor, and other more specialized functions on the upper floors.
11. The overall height of the activity center should be restricted to four floors or the existing Westinghouse building height.
12. The existing Westinghouse and ITT-Grinnell buildings should be rehabilitated to accommodate mixed uses, and the existing glass warehouse should be reconstructed to allow better internal connections with the Westinghouse building, to offer access from more entry points, and to develop a new facade facing onto the central court.
13. The City should encourage the development of different open or covered interconnections between the existing and future buildings within the project area. These connections could take the form of internal corridors, bridges, or small open spaces.
14. A major pedestrian and bicycle overpass connection from the Bayfront area and City Center buildings should be provided over the existing railroad right-of-way to the central court area.
15. Parking structures serving this area should be located along 62nd Street, where automobile access would have minimal conflict with pedestrians and the structures could serve as a buffer from manufacturing uses in the next block.

Hollis Street Park Activity Center (see Figure III-22)

16. The unbuilt area bounded by Stanford Avenue, Hollis Street, 53rd Street, and Horton Street should be rehabilitated and developed as a public recreational facility. All adjacent City blocks should be encouraged to develop more intensively to increase the vitality of this area.
17. The image of the park should be defined by providing distinct borderlines around the facility and by enclosing it with continuous building facades on the surrounding blocks.
18. The park should be the focal point of the citywide open space system, and the City should provide direct connections with residential areas and other parks and activity centers. Recreational facilities in the park should be visible and easily accessible.
19. Existing views from the park to the hills and toward the Bay along Stanford Avenue should be preserved and enhanced. The Stanford railroad right-of-way between Hollis and Horton Streets should be incorporated as part of the park.

Triangle Activity Center (see Figure III-23)

20. The triangular area between 43rd Street, Adeline Street, and San Pablo Avenue should be rehabilitated and developed comprehensively as one planning unit.

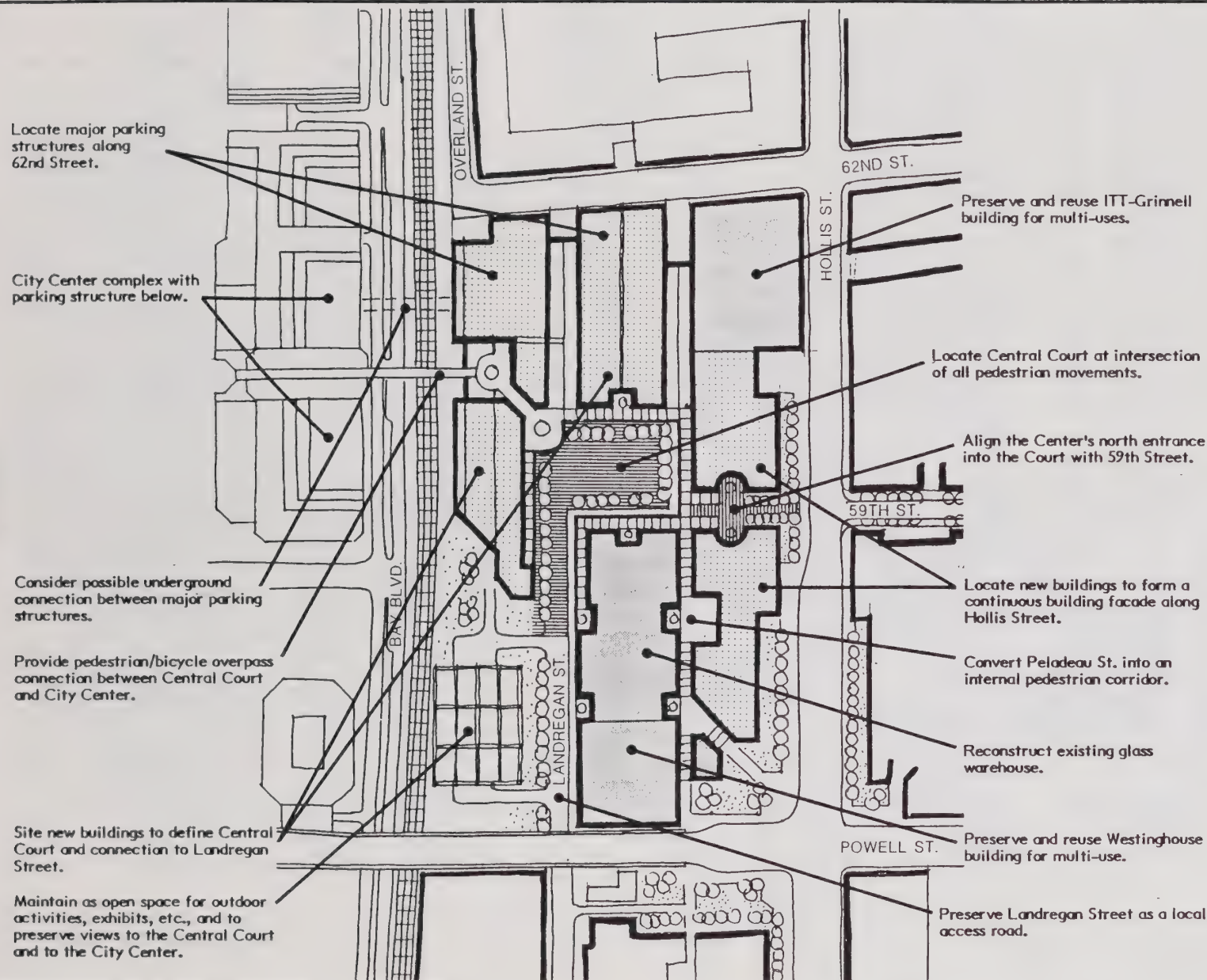


FIGURE III-21
WESTINGHOUSE COURT
ACTIVITY CENTER

EXISTING BUILDINGS

PROPOSED STRUCTURES

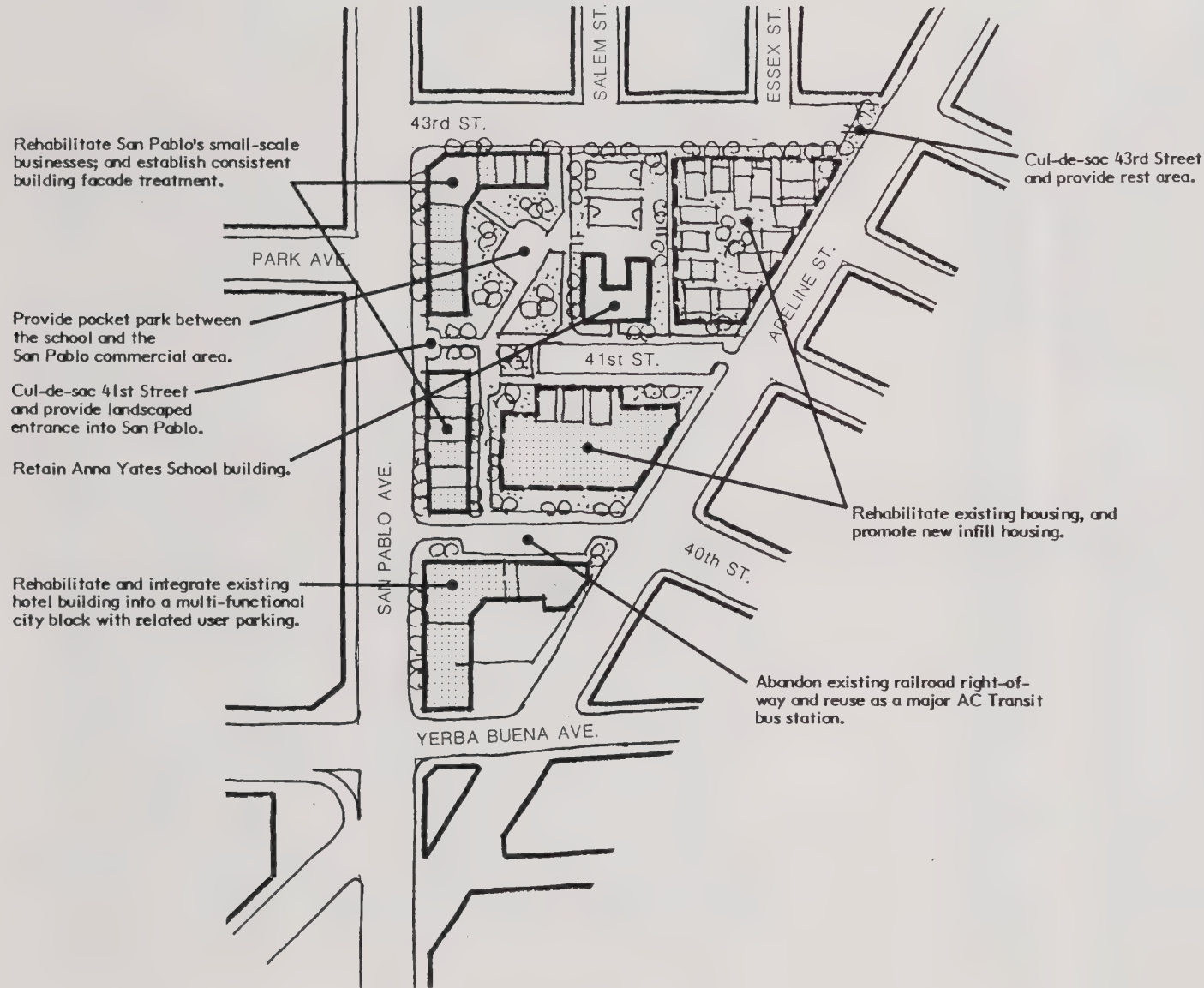


FIGURE III-23
TRIANGLE
ACTIVITY CENTER

EXISTING BUILDINGS



PROPOSED STRUCTURES

21. The City should restrict truck and car through-traffic on 41st and 43rd Streets, and encourage pedestrian and bicycle circulation by closing the ends of residential streets and providing pedestrian connections to the school and commercial areas.
22. Existing housing along Adeline Street should be rehabilitated, and new infill housing should be promoted.
23. The City should encourage the area between Anna Yates school and San Pablo Avenue to be developed for a mini park.
24. The existing railroad right-of-way between 40th Street and San Pablo Avenue should be redeveloped for the relocated AC Transit bus depot, and the depot should be connected to the school and housing areas with pedestrian/bicycle pathways.
25. The San Pablo Avenue frontage should be enhanced by promoting a continuous facade of three-story commercial and mixed use buildings.
26. The existing hotel building and parking should be rehabilitated and integrated as part of a mixed use block, taking advantage of this highly visible and accessible location within the City. This block should accommodate the new bus depot and related parking.

Implementation

1. Amend the zoning ordinance to permit mixed use activity centers and to implement policies on height limits, floor area ratios, open space requirements, setbacks, and other physical characteristics of development projects (City). As a result, the ordinance would be the key means to guide the City's building form as illustrated in Figure III-18. Zoning may apply to entire districts or to specific sites in the case of special purpose, overlay, or floating zones. Overlay or floating zones could be used to establish design requirements for scenic areas, historic areas (such as around Park Avenue and Horton Street), view corridors, or activity centers (such as those shown in Figure III-20). As an example, conventional zoning or special historic site zoning can be employed to limit uses, signage, parking, building heights, vegetation, and other characteristics to those that will be consistent with the character of the existing landmark or focal point and to limit density, lot coverage, and setbacks to allow for full development without affecting the historic or focal element(s) on the site.
2. Incorporate into any specific plan prepared in the City the necessary standards, guidelines, and flexibility to implement the urban design objectives (City). The California Government Code allows preparation of specific plans to regulate site development, including specification of type of use permitted, allowable density, building placement and bulk, areas to remain in open space, and provisions for roadways, utilities, and landscaping. These provisions provide greater flexibility than is possible with conventional zoning, since under the specific plan, conditions are established based on specific site conditions. With these provisions, requirements can be varied from one legal parcel to another to help achieve an attractive, functional development project and one that complements and supports surrounding activities. As indicated in the Land Use Element, a specific plan would be appropriate for the Westinghouse-ITT Grinnell Activity Center.

3. Explore the desirability of adopting a building block zoning approach as described in the Land Use Element. This approach avoids the rigid application of use and development standards, and requires conscious consideration of an individual parcel's circumstances prior to applying zoning. Building block zoning is much more flexible in application, because it involves deliberate design decisions about height, use combinations, floor areas, open space, etc., for each site. Each of these factors is considered independently, and various combinations are defined for each site.
4. Establish a design review process (City). Design review is an essential tool for influencing the design of private projects. It provides the City with the opportunity to require changes in the design of buildings and of streets within or adjacent to the project sites to meet the City's overall design objectives. The guidelines formulated in this Community Design Element shall be used to assist the City in reviewing development proposals for activity centers and major street corridors, and should be made available to enable developers to respond to the City's design objectives.
5. Actively evaluate and comment on the development programs of neighboring jurisdictions and notify jurisdictions of changes in Emeryville's planning program so that the development pattern set forth in Figure III-17 is implemented.

H. LANDSCAPE

Introduction

The Role of Landscaping in the Urban Environment. The urban environment is characterized by densely packed buildings, concrete, automobiles, and their attendant dust, noise, wind, and glare. The degree of such conditions has a profound impact on the "liveability" of any city. Landscape amenities, including lighting, signage, street furniture, public art, water features, and large-scale plantings, can help to mitigate these harsh environmental conditions and create a positive community image. Plants, in particular, because they are a natural, living element, can bring a sense of nature into the City. From a design perspective, plantings can help express the character of an area, and visually connect disparate elements. A separate Landscape Element has been provided in this Plan to highlight the special importance of public landscape amenities, and plantings in particular, and establish policies that ensure that priority is given to them in the planning process. This element is closely related to other General Plan elements; namely, Circulation, Public Facilities, Land Use, and Community Design.

Streets and Circulation Routes. Aside from parks and public plazas, which are considered in the Public Facilities, Land Use, and Community Design Elements of this Plan, the City's streets and other circulation routes make up the bulk of the public environment. Public streets are part of the daily life and routine of all residents. Street landscaping, therefore, provides an immediate benefit to a great proportion of the City's population. Street tree plantings can help unite conflicting architectural styles, provide shade and shelter for pedestrians, and give welcome visual relief and reduce glare from expanses of paved surfaces. Mature trees are structural elements in their own right and can be used to define and enclose spaces in the City.

Existing Landscape Character

A survey of Emeryville's streets reveals great disparities between the landscape character of different areas. East Emeryville consists of a mixture of industrial, manufacturing, and older residential development. Although there are intermittent plantings of street trees, the scene is dominated by overhead utility wires, cars, and the visual discordance between buildings of different sizes, shapes, and finishes, with varying heights and setbacks. The Bayfront area, with the exception of the new development along Interstate 80, consists entirely of large-scale industrial and manufacturing uses, and has virtually no landscape amenities. The Peninsula area has extensive landscaping within the Watergate complex and along the Powell Street corridor, but the office and restaurant area near the freeway is characterized by huge parking lots, a lack of trees, and an environment generally unfavorable to pedestrians. In general, throughout the City, new developments are well-landscaped, but are anomalies within the greater context, surrounded on all sides by a relatively barren landscape. Sidewalks in industrial areas are very narrow or entirely absent. The City's scattered commercial areas are sorely lacking in landscape amenities. The intermittent trees on San Pablo Avenue are often neglected and are so small in relation to the width of the street and the intensity of the traffic that they have minimal effect.

The present pattern of intermittent, uncoordinated street landscaping is largely the result of piecemeal private development and the efforts of individual landowners. In order for the City to create an integrated street landscape system, it must address the problem at a level higher than that of the individual property or development project.

Objective

- A. Devise a landscape master plan for the entire City, identify areas of greatest priority, and coordinate the development of a landscape system which serves to unite the City.

Policies

- I. The City should plan for its landscape amenities, recognizing the character of the area, its intended use, and physical circumstances such as space limitations shading patterns, and solar orientation. Proposed landscape corridors that take these factors into account are illustrated in Figure III-24. A master tree list, indicating appropriate tree species for each corridor, is presented in Table III-22. The list should be interpreted as suggestions; the City can recommend other trees not on the list that conform to the height, spread, texture, growth habit, and visual image described in the text for each of the various landscape corridors.

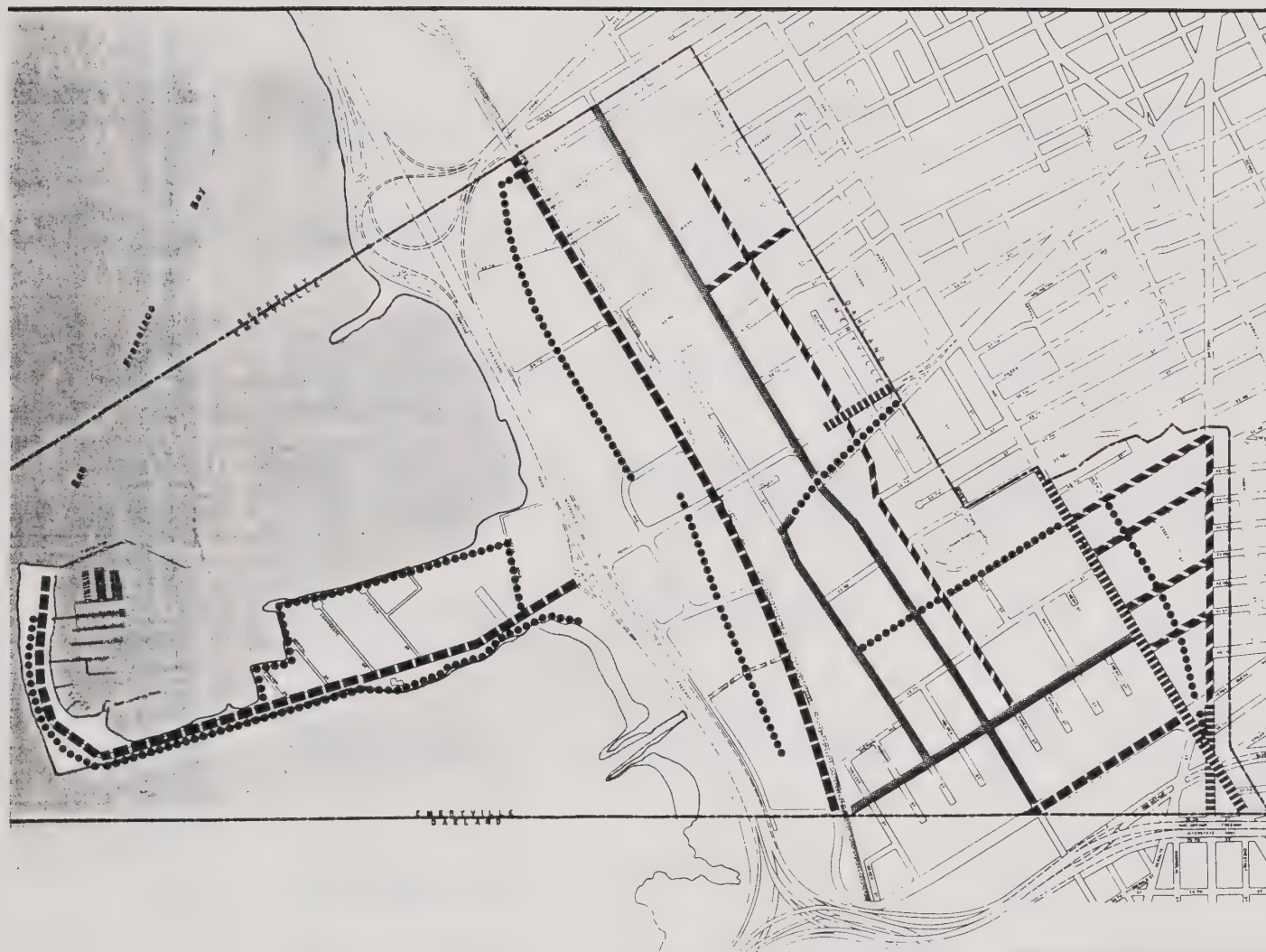


FIGURE III-24
LANDSCAPE
CORRIDORS

- ① COMMERCIAL STREETS
- ② PEDESTRIAN AND BIKEWAYS
- ③ CITY BOULEVARDS
- ④ INDUSTRIAL STREETS
- ⑤ RESIDENTIAL/BUFFERS
- ⑥ OTHER (applicable to streets other than those identified above)



EMERYVILLE
GENERAL PLAN
SEDWAY COOKE ASSOCIATES

TABLE III-22: RECOMMENDED TREE SPECIES FOR LANDSCAPE CORRIDORS (cont.)

Botanical Name, Common Name	Features/Problems	Height/ Spread	Texture	Growth Habit	Corridor Types
 <i>Acer macrophyllum</i> Big leaf maple	DEC, fall color, flowers, Ca. native, riparian, needs moisture	30'-100'/ 30-50'	coarse	variable, spreading	2
 <i>Albizia julibrissin</i> Silk Tree	DEC, flowers, specimen litter, d.t.	25'-40'/ 35'	Fine	Spreading	2,3,6
 <i>Alnus rhombifolia</i> White alder	DEC, Ca. native, riparian, needs moisture	40-100'/ 40'	Medium	Spreading- Upright	2
 <i>Brachychiton populneum</i> Bottle tree	BLE, d.t., litter	30'-50'/ 30'	Medium- Coarse	Upright	1,2,3
 <i>Callistemon viminalis</i> Weeping Bottle brush	BLE, red flowers, d.t.	20-30'	Fine	Upright, Weeping	4
 <i>Catalpa speciosa</i>	DEC, flowers, fast growth, tropical effect, messy	40'-60'/ 30'-40'	Coarse	Upright	3
 <i>Ceratonia siliqua</i> Carob	BLE, nice foliage, needs good drainage	30'-40'/ same	Medium	Compact, Spreading	1

KEY: BLE: Broad-leaf Evergreen DEC: Deciduous d.t.: drought tolerant

Landscape Corridor Types: 1. Commercial Streets 2. Pedestrian and Bikeways 3. City Boulevards
4. Industrial Streets 5. Residential Buffers 6. Other

TABLE III-22: RECOMMENDED TREE SPECIES FOR LANDSCAPE CORRIDORS (cont.)

	Botanical Name, Common Name	Features/Problems	Height/ Spread	Texture	Growth Habit	Corridor Types
	<i>Cinnamomum camphora</i> Camphor tree	BLE, foliage color, casts deep shade	large	Medium	Upright, Spreading	1,4,5
	<i>Ficus nitida</i> Indian laurel	BLE, clean, neat, mod.-fast growth		Medium	Upright, Compact	4
	<i>Fraxinus velutina</i> ~Modesto' Modesto ash	DEC, fall color, shade, pests, fungus	30'-50'/ 30'	Medium	Spreading	2,6
	<i>Ginkgo biloba</i> Maidenhair tree	DEC, fall color, likes heat, use male forms only	30-50'+	Medium	Upright, Spreading	2,6
	<i>Geijera parviflora</i> Australian willow	BLE, neat, pest-free, d.t.	20-30'/ 20'	Fine	Compact, spreading	1,4
	<i>Grevillea robusta</i> Silk oak	BLE, fern-like leaves, rapid growth	50-60'/ 25'	Fine- Medium	Upright- Narrow	1
	<i>Hoheria populnea</i> New Zealand Lace Bark	BLE, flowers, graceful, d.t.	50'-60'	Medium		2

KEY: BLE: Broad-leaf Evergreen DEC: Deciduous d.t.: drought tolerant
 Landscape Corridor Types: 1. Commercial Streets 2. Pedestrian and Bikeways 3. City Boulevards
 4. Industrial Streets 5. Residential Buffers 6. Other

TABLE III-22: RECOMMENDED TREE SPECIES FOR LANDSCAPE CORRIDORS

	Botanical Name, Common Name	Features/Problems	Height/ Spread	Texture	Growth Habit	Corridor Types
	<i>Laurus nobilis</i> Laurel	BLE, formal, slow growth, needs good drainage	12'-40'	Medium- Coarse	Upright, Compact	4
	<i>Leptospermum laevigatum</i> Australian tea tree	BLE, flowers, seaside conds., d.t., needs gd. drainage	30'	Fine	Spreading	3
	<i>Liquidambar styraciflua</i> American sweet gum	DEC., scarlet fall color resembles maple	60-70' / 30-40'	Medium- Coarse	Upright- Narrow	5
	<i>Lyonothamnus floribundus</i> 'Asplenifolius' Ironwood	BLE, Ca. native, d.t. seaside conditions	25'-60' / 20'-40'	Fine		2
	<i>Malus</i> spp. Crabapple	DEC., flowers specimen	25'-30'	Medium	Spreading	2,3
	<i>Magnolia grandiflora</i> Southern magnolia	BLE, flowers, slow to establish	30'	Coarse	Upright- Spreading	2,3
	<i>Paulownia tomentosa</i> Empress tree	DEC, flowers, fragrance, tropical effect, litter	40' / 30'	Coarse	Upright Spreading	3

KEY: BLE: Broad-leaf Evergreen DEC: Deciduous d.t.: drought tolerant

Landscape Corridor Types: 1. Commercial Streets 2. Pedestrian and Bikeways 3. City Boulevards
4. Industrial Streets 5. Residential Buffers 6. Other

TABLE III-22: RECOMMENDED TREE SPECIES FOR LANDSCAPE CORRIDORS (cont.)

Botanical Name, Common Name	Features/Problems	Height/ Spread	Texture	Growth Habit	Corridor Types
 <i>Pistacia chinensis</i> Chinese pistache	'DEC, fall color, shade, d.t., pest-free	30-50' / same	Medium	Spreading	1,2,5,6
 <i>Prunus serrulata</i> Japanese flowering cherry	DEC, flowers	20-25' / 10'-20'	Medium	Spreading	1,2,5,6
 <i>Schinus terebinthifolius</i> Brazilian pepper	BLE, fruit (red berries), d.t.	15'-30'	Medium- Coarse	Upright, Spreading	1,4,5
 <i>Tristania conferta</i> Brisbane box	BLE, bark, flowers, fast-growing	30-60'	Coarse	Upright	1
 <i>Washingtonia robusta</i> Fan palm	Palm, dramatic accent, tropical effects	80-100' / 12'	Fine- Medium	Upright	3
 <i>Zelkova serrata</i> Zelkova	DEC, fall color, pest-free	50-60' / 30-40'	Medium- Fine	Upright- Vase Shaped	1

KEY: BLE: Broad-leaf Evergreen DEC: Deciduous d.t.: drought tolerant

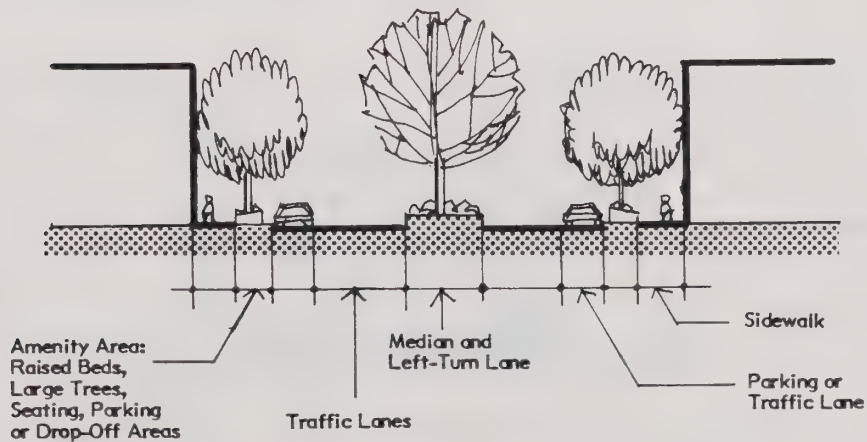
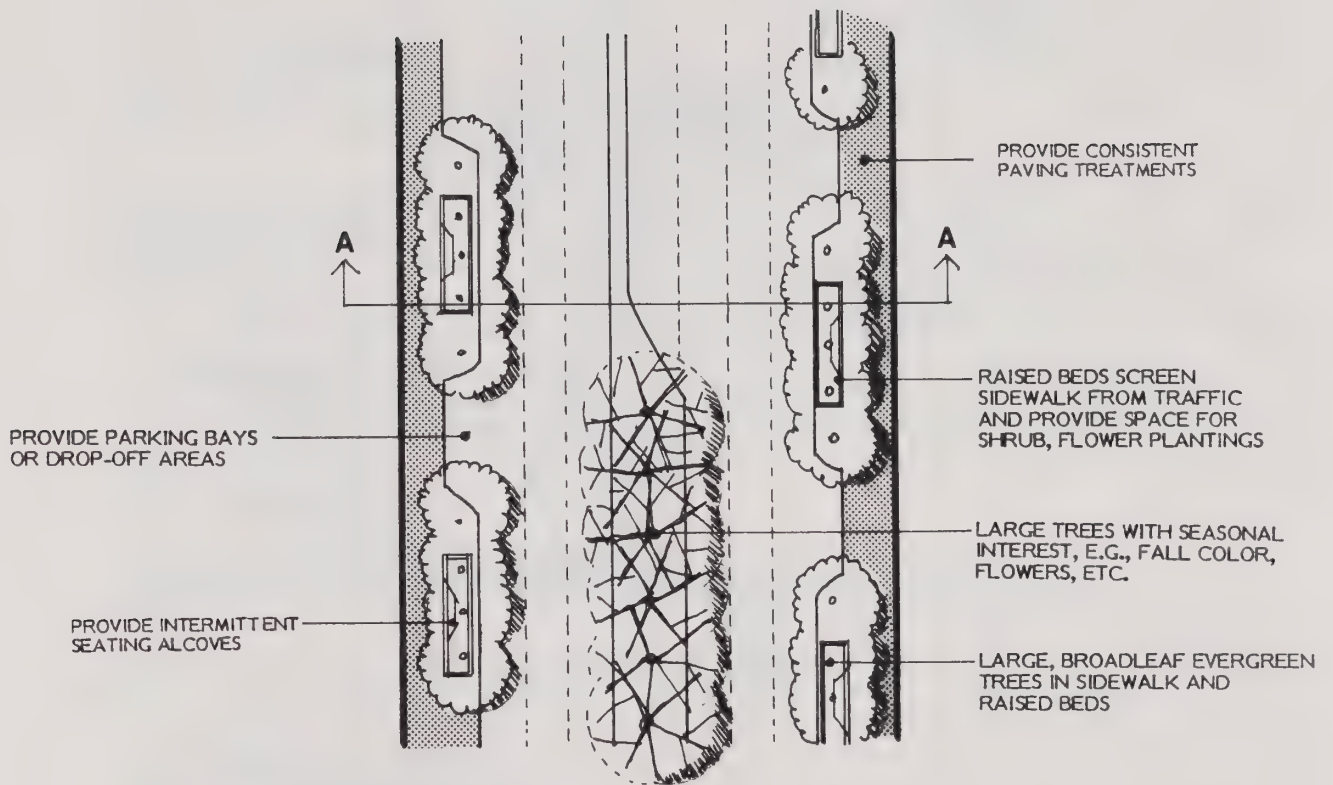
Landscape Corridor Types: 1. Commercial Streets 2. Pedestrian and Bikeways 3. City Boulevards
4. Industrial Streets 5. Residential Buffers 6. Other

Commercial Streets: San Pablo/Powell Corridors. These streets, which are the major vehicular thoroughfares as well as commercial strips, are important in presenting the public image of the City to residents as well as motorists passing through. With landscape amenities, these streets could become attractive to pedestrians. Because of the width of the streets and number of traffic lanes, a planted median strip, including both trees and shrubs, is desirable. The trees in the median should provide some seasonal display, such as spring flowering or fall color. Sidewalk trees, located in tree wells and in raised beds containing shrubs or flowering ground cover, should be evergreen and of a height and spread in scale with the width of the street. Street tree planting should be part of an overall street re-design to facilitate parking and drop-offs, create seating areas, and improve signage and lighting. Special paving treatments, planters, trash containers, lighting fixtures, and benches would be appropriate for these areas. An illustration of the landscape concept for this area is found in Figure III-25.

Pedestrian and Bicycle Corridors. Pedestrian and bicycle paths, located on abandoned rights-of-way or created in new developments, will form a circulation network linking the City's major open spaces and activity centers. These are essentially linear parks, containing paved plaza spaces at street intersections, paved or unpaved pathways, tot lots or other formal recreational facilities, seating areas, informal recreation areas, and formal or informal plantings. Large spaces, 60-120 feet wide, can accommodate informal lawn areas for recreation and picnicking, alternating with woody or flowering ground cover to minimize watering needs. Narrower spaces, up to 60 feet wide, will have a more formal design, with paved pathways and seating alcoves. An illustration of this type of corridor is shown in Figure III-26. Large trees, tall evergreens of a columnar or a spreading habit, should be used to emphasize the linear form of the corridors. Smaller trees and woody shrubs and ground cover with seasonal color and annual flowering displays will accent the background structure of the large evergreen trees. Areas bordering Temescal Creek should be planted with native riparian species.

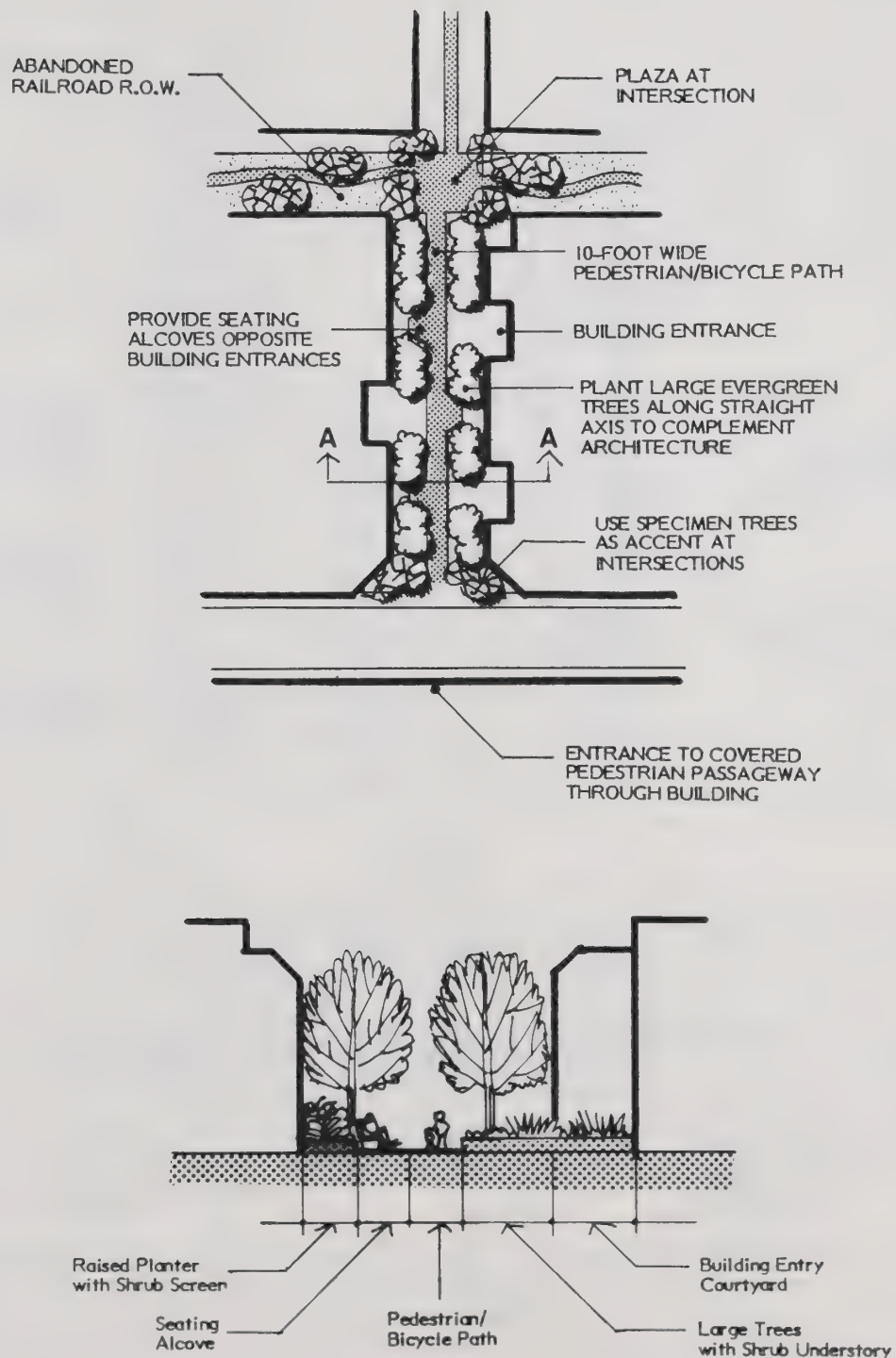
City Boulevards: Yerba Buena, Bay, Powell on the Peninsula. These wide streets are major vehicular thoroughfares where virtually all uses are automobile-oriented. These streets should have a suburban landscape character, with the planting serving primarily an ornamental function, being viewed from moving cars. Generous-sized areas should be set aside for median and sidewalk planting strips containing large-textured, fast-growing plants with showy effects. Since the planting strips are not likely to be used for foot traffic or recreation, the use of turf grasses should be minimized to conserve water and reduce maintenance. Other landscape amenities of importance in these areas are signage and lighting.

Industrial Streets: Hollis, Park, Horton. The land uses along these streets are predominantly industrial and manufacturing. The rights-of-way tend to be narrow, with narrow sidewalks, and are lined with functional warehouse-type buildings, some of a historic character. The buildings frequently are set back very little from the property line, restricting the space available for landscaping. To honor the utilitarian character of these areas, the landscape design should be very simple, consisting of formal evergreen street trees of a narrow, compact growth habit, which will complement the architecture, and allow it to remain the dominant feature.



SECTION A-A

Figure III-25
**TYPICAL LANDSCAPE TREATMENT:
 COMMERCIAL STREETS**



SECTION A-A

Figure III-26
TYPICAL LANDSCAPE TREATMENT:
NARROW PEDESTRIAN/BIKEWAY

recreation and picnicking, alternating with woody or flowering ground cover to minimize watering needs. Narrower spaces, up to 60 feet wide, will have a more formal design, with paved pathways and seating alcoves. An illustration of this type of corridor is shown in Figure III-26. Large trees, tall evergreens of a columnar or a spreading habit, should be used to emphasize the linear form of the corridors. Smaller trees and woody shrubs and ground cover with seasonal color and annual flowering displays will accent the background structure of the large evergreen trees. Areas bordering Temescal Creek should be planted with native riparian species.

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Residential/Buffers: Doyle, Adeline, 47th Street in the Triangle. This type of corridor typically occurs where residential uses abut with commercial, warehouse, or mixed uses, or within residential areas separated by wide streets. Where residential and non-residential uses are on opposite sides of the same street, landscaping should serve to visually unite the two sides of the street, and to some extent, to screen the commercial/warehouse buildings from the residential uses. Sidewalks should contain a planting strip for street trees and ground cover. Commercial buildings should have a planted setback or foundation planting if space allows. Street trees should be medium size, with a strong form and possibly seasonal effects.

Other. This category covers the remaining local streets not identified above. Landscaping on these streets would be desirable primarily to provide an aesthetically pleasing atmosphere. Street trees should be medium size, fan-shaped, and deciduous.

2. Public and private development projects should emphasize the use of plant materials which are environmentally adapted to Emeryville's climatic conditions, and which are pest-resistant and drought-tolerant, in order to reduce the City's maintenance costs as well as its reliance on toxic pesticides. For example, the use of turf grasses for purely ornamental purposes, consuming large amounts of water as well as being prone to disease and requiring constant maintenance, should be minimized and other types of ground cover substituted.

Residential/Buffers: Doyle, Adeline, 47th Street in the Triangle. This type of corridor typically occurs where residential uses abut with commercial, warehouse, or mixed uses, or within residential areas separated by wide streets. Where residential and non-residential uses are on opposite sides of the same street, landscaping should serve to visually unite the two sides of the street, and to some extent, to screen the commercial/warehouse buildings from the residential uses. Sidewalks should contain a planting strip for street trees and ground cover. Commercial buildings should have a planted setback or foundation planting if space allows. Street trees should be medium size, with a strong form and possibly seasonal effects.

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3. The City's commercial areas, and other streets which identify the City to outsiders as well as to residents, should be given priority for landscape development.
4. The City shall develop regulations providing for the landscaping of parking lots.

Implementation

1. Consider appointing a special landscape coordinator to devise a landscape master plan for the City, and establish priorities, phasing, and funding strategies (City). Initial investment, maintenance, and replacement costs can be significantly reduced through the choice of appropriate species and the design of irrigation systems. Examples of appropriate species are native California plants or plants native to regions climatically similar to northern coastal California which require less water and are more pest- and disease-free than many commonly used ornamental plants. Minimizing lawn turf areas, which typically consume 70% of landscape water requirements, and using drought-tolerant ground cover or turf species requiring little water will reduce maintenance costs.¹ Use of smaller-sized nursery stock in initial installation, except in areas where an immediate effect is desired, is generally recommended. Studies have shown that the size of plants after five years is the same for 1-gallon plants as for 15-gallon, and the smaller plants are stronger and more drought-tolerant

¹Saratoga Horticultural Foundation, Success List of Water-Conserving Plants, September 1982.

because they are able to form a deeper root system than the larger plants. Needless to say, the smaller container stock is less costly than the larger stock.¹

2. Use the landscape master plan to review all landscape improvements on public property in the City, whether by a public or a private entity (City).
3. Allocate appropriate funding to ensure that landscaping is properly maintained (City). The typical urban street is a difficult environment for plants to survive in because of reduced air quality, soil compaction and limited root area, damage from vehicles, foot traffic, pests and diseases, wind tunnel effects, and a host of other problems. With adequate commitment of public resources, these problems can be surmounted through provision of adequate space for plantings, proper species selection, and installation and regular maintenance of plantings. It is essential to the success of any City landscaping program that an adequate commitment of resources be made for ongoing maintenance. Without proper maintenance of plant materials, especially in the critical first five years of growth, the funds spent for installation are wasted. Badly maintained, weedy, or dead landscape plantings are a demoralizing sight, and actually may be worse for a City's image than no landscaping at all.

¹ Ibid.

CHAPTER IV: ENVIRONMENTAL RESOURCES

A. INTRODUCTION

Natural resources represent ecological and economic benefits to the City as well as valuable recreational and scenic amenities. State law requires cities and counties to identify natural resources and to prepare and implement policies guiding their management. The legislative requirements, outlined in the Government Code, include:

- Section 65302(d) which requires the preparation of a conservation element to guide the conservation, development, and utilization of natural resources.
- Sections 65560, et seq., which require the preparation of an open space element specifying open space land for the preservation of natural resources, the managed production of resources, outdoor recreation, and public health and safety.

Open space and natural resources are not merely undeveloped land or leftover spots of vacant lands. Instead, they play a vital part in the organization and identity of the community. These resources can help to create a high-quality environment, which stimulates the economic and social health of the community.

Accordingly, the Environmental Resources component of the Emeryville General Plan identifies lands of ecological value, specifies policies for the protection of plant and animal life, and outlines measures for appropriate use and protection of resources which are expended or affected by human activity. The elements in this component include:

- Water Resources;
- Biological Resources;
- Air Quality;
- Energy; and
- Cultural and Historic Resources.

Open space falls into two very general categories: ecological preserves, and active or passive outdoor recreation. The first type of open space can protect the habitat of an endangered species or provide scenic beauty. Its size and location is dictated by the natural factors which define it. The second type can be provided in several different locations, and its size requirements are flexible. Because the primary open space opportunities in Emeryville exist along the Bay shoreline, the General Plan presents open space issues within the Water Resources, Biological Resources, and Public Facilities Elements.

The ultimate intent of the Environmental Resources component is not to prohibit the development or use of natural and cultural resource areas; rather it is to increase access where this access will not destroy the natural or cultural value of an area, and to encourage public education and participation in the protection of natural or cultural resources. In some cases, protection does necessitate development restrictions.

The policies and discussion within the Environmental Resources component must be considered in conjunction with those of other General Plan components and elements, particularly those of land use, environmental hazards, and community design. Land uses and community design are in many cases governed by environmental resources. The need to protect biological resources, for example, will call for restrictions in land use. Conversely, many natural resources, such as open space, can define the community and will be utilized as a key to the City's recreation and community design opportunities. In some cases, natural resource areas also serve public safety purposes. A natural preserve may be designated in a flood or seismic hazard area, for example. Thus, the policies of the elements in the Environmental Resources component overlap with the rest of the General Plan.

B. WATER RESOURCES

Introduction

There are three major water resources in Emeryville: San Francisco Bay; Temescal Creek, which flows through the southern portion of the City and empties into the Bay; and ground water. Drinking water is supplied by the East Bay Municipal Utility District (EBMUD) from a reservoir in the East Bay hills. Although the supply of adequate drinking water is not presently a constraint to future growth, and the quality of the City's water resources does not directly affect water for drinking, water conservation and water quality¹ are important issues, on both a local and a regional basis.

Water Bodies

San Francisco Bay. Because of the importance of the San Francisco Bay as an environmental, economic, recreational, and visual resource, protection of its water quality is of critical concern to all jurisdictions along the shoreline. Water quality management efforts are described in the San Francisco Bay Water Quality Control Plan (1982) administered by the Regional Water Quality Control Board (RWQCB). The RWQCB has the authority to penalize dischargers who violate water quality standards. Several other agencies are concerned with the use and protection of San Francisco Bay. The San Francisco Bay Conservation and Development Commission (BCDC) was established in 1965 under provisions of the McAteer-Petris Act passed by the Legislature in 1965. This act charged BCDC with the responsibility for developing "a comprehensive and enforceable plan for the conservation of the water of San Francisco Bay and the development of its shoreline." Both the San Francisco Bay Plan (1983) and the RWQCB San Francisco Bay Water Quality Control Plan recognize the recreation and conservation opportunities provided by the Bay and its shoreline.

The southern portion of the Bay shoreline in Emeryville is comprised of a regionally important salt marsh, the Emeryville Crescent. Salt marshes are critical to the entire Bay ecology: not only do they help to improve the quality of the water, but

¹ Wastewater treatment is discussed in the Public Facilities Element.

they support a diverse wildlife population. Although most of the Emeryville Crescent actually falls within the borders of the City of Oakland, the portion which is within Emeryville is no less important to the overall functioning of the salt marsh and Bay ecosystem. This portion of the Bay is affected by several drainage outlets: a storm sewer outfall south of the Peninsula, a wastewater treatment outfall in the southern portion of the Crescent in Oakland, and Temescal Creek. Ground water also migrates into the Bay; however, because this water moves very slowly, its effects on the Bay and salt marsh are less apparent and, to a certain extent, less significant than the drainage outlets at the edge of the Bay.

Both the BCDC and the U.S. Army Corps of Engineers (COE) issue permits for any filling activities on the Bay. The COE also administers and implements many shore erosion control projects, such as the riprap on the Bay shoreline. Riprap has been necessary along the deeper waters adjacent to Emeryville's Peninsula in order to check erosion; it was replaced in 1986.

Temescal Creek. Temescal Creek is a channelized creek draining Lake Temescal in the Oakland foothills. It is dry most of the year and runs underground through portions of Emeryville. The concrete lining keeps the creek free from erosion and sedimentation problems; however, there are indications that the creek may be polluted from urban sources. This does not currently represent a threat to public safety because the creek is highly inaccessible. Should the creek be reconfigured as an open waterway, as currently proposed, human contact with the water could increase.

Ground Water. Water which exists below the surface of the ground, in the openings of soil and rocks, is called subsurface or ground water. The upper limit of this saturated zone is called the water table. In Emeryville, the water table is relatively high, occurring only several feet below the surface of the ground in places. Because this water migrates slowly toward the Bay, the quality of the water ultimately could affect the Bay ecosystem. Pollutants which have recently been detected in the Bay have not been traced to ground water sources. Because the movement of the water is slow, it is not seen as an immediate threat; nevertheless, maintenance of ground water quality should not be overlooked as an important water resource issue.

Water Pollution

Two sources of water pollution can threaten the quality of the water: point sources and non-point sources. Point sources are dischargers that dispose of their wastewater, or effluent, from a single point, such as a wastewater treatment plant outfall. Effluent from these sources is relatively simple to control by applying treatment processes "at the end of the pipe." In contrast, non-point sources are described as diffuse, areawide sources, such as construction sites and roadways. These sources often are not amenable to structural solutions and typically require land management or non-structural source controls.

In the Emeryville vicinity, where the land is virtually all urbanized, urban stormwater runoff is a major source of non-point water pollution. Pollutants such as suspended solids, heavy metals, and nutrients are often found in samples of urban stormwater runoff. These pollutants are typically deposited onto street surfaces and washed into receiving waters during the initial phases of a storm. This "first flush effect" can create a serious oxygen depletion in the vicinity of the discharge and result in serious diminution of the water's ability to assimilate waste loads. The

Association of Bay Area Governments (ABAG) has estimated the amount of suspended solids in the Bay Area from stormwater runoff to be an order of magnitude greater than from various point sources around the Bay.¹ A direct example of the problems associated with stormwater runoff is the contamination of shellfish harvesting areas near East Bay creeks and storm drains.² ABAG, through its Environmental Management Plan, has recommended several measures to alleviate non-point sources of water pollution. These measures deal primarily with erosion control for construction sites and control of oil and grease from roadways and parking lots.

Discharges from point sources are regulated by the RWQCB, which issues effluent standards as well as permits stipulating the conditions and water quality standards that must be met by certain municipal and industrial dischargers. The effect of RWQCB standards and regulations has been to greatly reduce the pollutant loading from these sources. None of the industries in Emeryville are considered major dischargers, as most discharge only small amounts of cooling water and/or runoff. Nevertheless, water quality protection efforts must be continued, as some past and present industrial activities have contributed to ground water contamination.

The East Bay Regional Parks District (EBRPD) conducted studies of Lake Temescal and its tributaries several years ago to determine pollutant levels. The studies uncovered a high level of bacteria in the creeks and determined that much of it could be attributed to wild and domestic animals. Although no studies were conducted on Temescal Creek below the lake, it is possible that the watercourse is similarly high in bacteria where it flows through Emeryville.³ The RWQCB has made no measurements of the water quality of Temescal Creek.

The Alameda County Flood Control and Water Conservation District maintains monitoring stations in the East Bay streams. During the period from 1975 to 1977, several tests were conducted on water drawn from monitoring stations along Temescal Creek just outside of Emeryville in Oakland. At that time, coliform levels in the creek were high.⁴

A sewer improvement program (East Bay Infiltration/Inflow Correction Program) has been initiated by EBMUD to eliminate wet weather overflows of raw sewage to community streets, creeks, and the Bay. Besides being a public health threat, these overflows are in violation of State and Federal law. The project involves rehabilitation of publicly owned sewer mains, construction of relief sewers to increase capacity during wet weather, and rehabilitation of privately owned building laterals.

¹California Regional Water Quality Control Board, San Francisco Bay Region Water Quality Control Plan: San Francisco Bay Basin, July 1982, pp. 4-36.

²California Department of Parks and Recreation, East Bay Shoreline: Feasibility Study, December 1982, p. 8.

³Pete Alexander, Water Resources Division, East Bay Regional Parks District, October 8, 1985.

⁴Kelvin Hickenbottom, Water Resources Engineer, Alameda County Flood Control and Water Conservation District, September 29, 1985; Surface Water Quality Monitoring Station data for Temescal Creek.

The RWQCB sometimes coordinates with the State Department of Health Services (DOHS) in the investigation and cleanup of site contamination due to inappropriate storage, handling, treatment, or disposal practices associated with toxic wastes and hazardous materials. The RWQCB is also responsible for monitoring industrial sites for possible leakage of hazardous materials. Activity in this area has increased due to increased information and a greater awareness on the parts of companies and individuals.

Despite this activity, however, some contamination of ground water has occurred. At the Electro-Coatings property on Park Avenue, heavy metals and volatile organics have been identified in the ground water. The RWQCB currently is attempting to assess the extent of the contamination before cleanup efforts can begin. No other ground water sites are known to be contaminated; however, soils contamination, identified at several other sites, represents a potential threat. Runoff from uncovered contaminated soil can enter storm drains, eventually reaching the Bay; and water can percolate through the soils, picking up some of the contaminants and transporting them to the ground water. Studies were conducted for some trace metals in clams in the mudflats of the Emeryville Crescent. These studies concluded that levels of silver, copper, and zinc were not high. Manganese, a non-toxic element, was found at exceptionally high levels. Manganese changes to a soluble form when no oxygen is present, and it will travel with water. It is possible that the manganese originated from industrial activities east of the railroad tracks, where traces of heavy metals have been found in the ground water. The presence of manganese could indicate the presence of these toxic metals, although no studies have been conducted to confirm or deny this possibility.¹ The contaminated sites, which include Westinghouse on Powell Street; ITT Grinnell, Chevron, and PG&E on Hollis Street; and Garrett Truck Lines and the Emeryville Marketplace in the Bayfront, are discussed in further detail in the Hazardous Materials Element (in the Public Health and Safety component).

Objectives

- A. Protect and enhance the quality of water resources in the Emeryville area.
- B. Encourage and promote water conservation.
- C. Protect human lives, plant and animal resources, and property from the hazards associated with contaminated water.

Policies

1. No actions shall be taken which degrade the existing water quality. Inadvertent water contamination incidents shall be corrected as soon as possible.
2. New development shall comply with local, regional, State, and Federal water quality plans and standards. Wastewater dischargers shall obtain necessary permits from the RWQCB.

¹Sam Luoma, Regional Research Hydrologist, U.S. Geological Survey, October 3, 1985.

3. The primary purposes of water resources in the Emeryville Crescent shall be to preserve rare and endangered species, to serve as a wildlife and marine habitat, and to contribute to the health of the San Francisco Bay ecosystem. Decisions regarding use of the Emeryville Crescent must be made with great care. Public access shall not be provided where it can destroy wildlife habitat or disturb the rare and endangered species that reside in or visit the Crescent (see Biological Resources Element). But within these constraints, the Crescent in particular, and Emeryville's water resources in general, can and should be used as an opportunity to promote environmental education and interpretation of marine life, waterbird habitats, tidal flows, and the role of the salt marsh in the Bay ecosystem. These opportunities are discussed further in the Biological Resources and Public Facilities Elements.
4. Access to water resources should be provided and water recreation encouraged consistent with BCDC Bay Plan and RWQCB Water Quality Control Plan policies and in accordance with sound ecological principles. Fishing is appropriate at the west end of the Peninsula and north of the Peninsula toward the Ashby Spit. Boating activities should be continued at the Marina. Non-water-contact recreation (picnicking, walking, sunbathing, nature study, and visual enjoyment) is encouraged in these locations and at the Bay shoreline. Temescal Creek should be restored to its natural state, as it would provide opportunities for additional non-water-contact recreation.
5. Erosion and sedimentation along the Bay shoreline should be minimized. The proposed reconfiguration of Temescal Creek or any other portions of the shoreline should not result in any long-term significant disturbance to the ecosystem of the Bay or the Emeryville Crescent. All construction sites and new development should be consistent with ABAG Environmental Management Plan recommendations as applicable. Storm drains should be cleared of debris.
6. The public should be protected from contaminated water. Public use of water resources should be encouraged only where water is not contaminated or where contamination exists at low enough levels that it would not threaten public health. As a key component of the Open Space Plan is to upgrade Temescal Creek and encourage public access to it, measures should be undertaken to assure that the water quality in the Creek would comply with appropriate water quality and public health standards.
7. Regional efforts to investigate and alleviate contamination should be supported. Several agencies currently monitor water quality: the U.S. Geological Survey, U.S. Army Corps of Engineers, EPA, DOHS, RWQCB, ABAG, East Bay Regional Parks District, Alameda County Flood Control and Water Conservation District, and EBMUD. University research occasionally involves water quality investigations. Future studies could facilitate Emeryville's efforts to alleviate water quality problems and assure protection of public health.
8. EBMUD efforts to encourage water conservation shall be supported. Water conservation techniques appropriate for new and existing development include:
 - requiring low-flush toilets;
 - installing shower head flow restrictors;
 - repairing leaky fixtures and pipes; and
 - promoting drought-resistant vegetation for landscaping uses.

Implementation

1. Support efforts to correct existing and potential water contamination problems (City, EPA, DOHS, RWQCB, ABAG). Known water pollutants should be contained or removed from ground water, and contamination in soils should be prevented from migrating into water supplies. Investigate identified contamination sites which are not yet assigned as DOHS cases and develop a cleanup program if necessary.
2. Implement recommendations of the Environmental Management Plan, Water Quality Control Plan, Water Conservation Program, and Bay Plan (City, ABAG, RWQCB, EBMUD, BCDC). Recommendations have been described to improve the quality of urban surface water runoff, conserve water, and provide appropriate uses for Bay water resources. Encourage public agencies to investigate water quality, and seek advice on the appropriateness of proposed activities or alterations.
3. Cooperate with other governmental agencies in their review of development proposals for compliance with local, regional, State, and Federal water quality plans and policies (City; regional, State, and Federal agencies).
4. Continue to work toward the correction of the sewer infiltration/inflow problem (City, Joint Powers Agency: Alameda, Albany, Berkeley, Emeryville, Oakland, Piedmont, Stege Sanitary District, EBMUD). Seek funding from the EPA and the State Water Resources Control Board, if available.

C. BIOLOGICAL RESOURCES

Introduction

Emeryville is almost entirely urbanized and no known wildlife or important plant communities exist east of the freeway. West of the freeway, in the area south of Powell Street commonly known as Emeryville Crescent, shorebirds and marine life thrive in the tidal salt marsh. The resources of the Crescent, described below, are depicted in Figure IV-1.

This element is closely related to several other General Plan elements. The health of the Emeryville Crescent is directly related to the condition and quality of the water in the Bay and the water which flows into it; that is, from Temescal Creek, the storm drain outfall north of it, and the wastewater treatment plant outfall to the south. Biological resources often represent valuable open space and recreational areas. Thus, issues in the Biological Resources Element correspond to some issues raised in the Water Quality and Public Facilities Elements.

Emeryville Crescent

The Emeryville Crescent is an important biological community and one of the few salt marshes still in existence in the San Francisco Bay. Almost 80% of East Bay

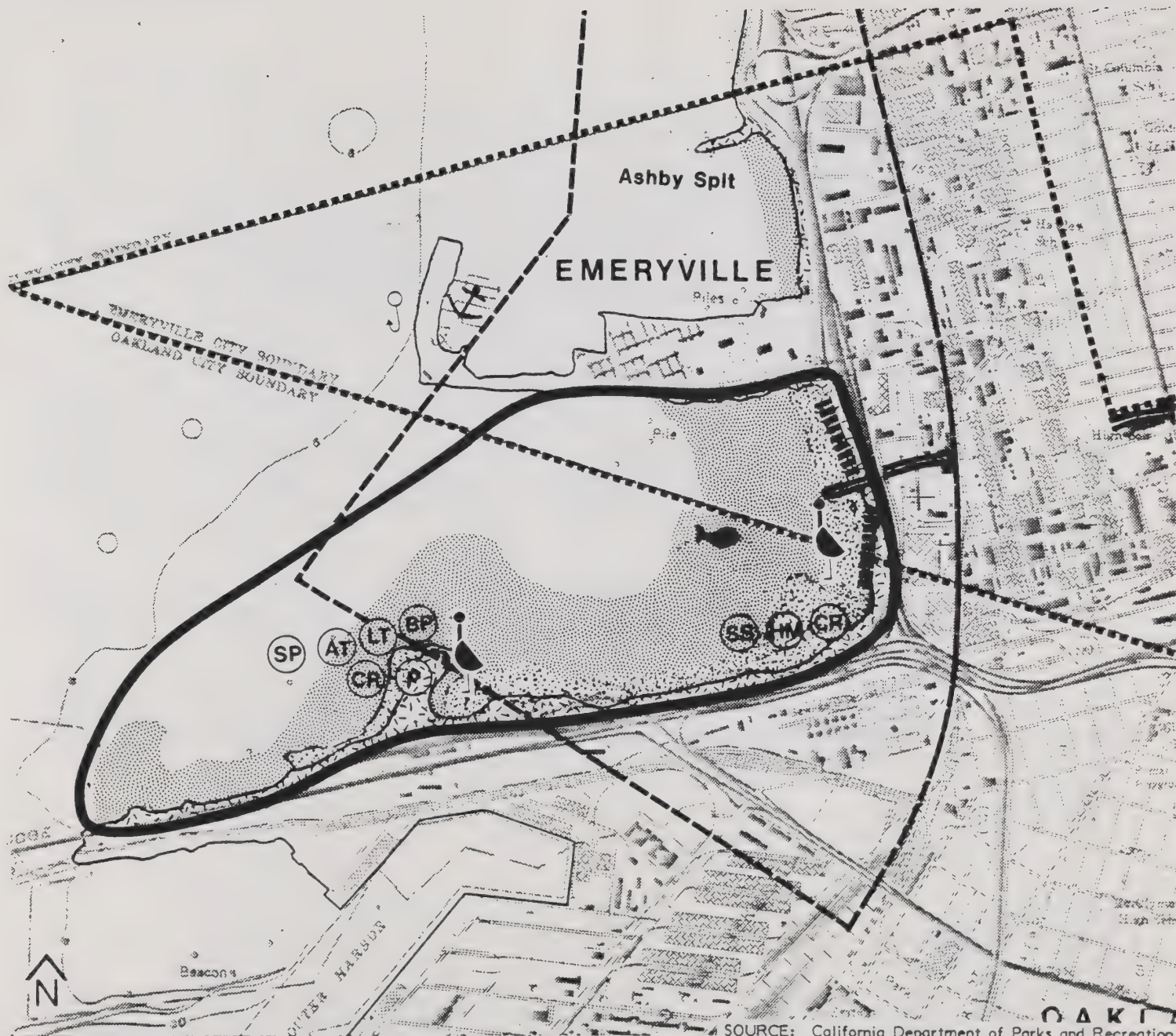
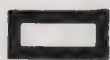


Figure IV-1
NATURAL RESOURCES

SOURCE: California Department of Parks and Recreation, East Bay Shoreline Feasibility Study, December 1982; California State Lands Commission, Public Trust Rights and Needs in the Albany Baylands, October 1982; Bodega Bay Institute, The Crescent, January 1978.



**Emeryville Crescent-
High Value
Wildlife Habitat**



Waterbird Habitat



**Striped Bass Spawning
Area**



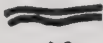
Mud Flat



Marsh



Upland



Temescal Creek



Marina



Fishing



Sculpture Area



BTLC "Property" Sold



Species of Concern:

P

RARE PLANT

CR

CALIFORNIA CLAPPER RAIL

HM

SALT MARSH HARVEST MOUSE

LT

CALIFORNIA LEAST TERN

BP

CALIFORNIA BROWN PELICAN

SS

ALAMEDA SALT MARSH SONG SPARROW

SP

SNOWY PLOVER

AT

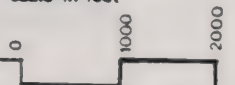
ARCTIC TERN

EMERYVILLE GENERAL PLAN

SEDWAY COOKE ASSOCIATES

Urban and Environmental Planners and Designers

SCALE in feet



marshes have been destroyed or removed from tidal action by diking or filling.¹ These salt marshes are essential to the Bay ecosystem because they oxygenate the water, an activity which is essential for the support of marine life. Creatures that live in the mudflats convert the organic matter found in the mud into food for fish, crabs, and birds.² The vegetation provides habitat for a number of small animals and birds, and an important feeding and resting area for migratory birds. Although most of the Crescent lies within Oakland, the portion which is within Emeryville is an essential part of the salt marsh ecosystem.

Most people who have driven Interstate 80 approaching the San Francisco-Oakland Bay Bridge through Emeryville have noticed the driftwood sculptures in the tidal marsh. Students from the California College of Arts and Crafts in Oakland erected the first mudflat sculptures in the early 1960s, using driftwood and whatever else had washed ashore. They were studying the work of Kurt Schwitters, a German artist known for his sculptures created from "odds and ends of commerce."³ Since then, people have been using the Crescent as a canvas for their driftwood art, and the "sculpture garden" has attracted people who have used it for recreation and sightseeing.

Initially, the sculptors only used natural materials and the thrust of the work was merely artistic. Since the late 1960s, some driftwood sculptors have used the mudflats as a political forum, importing materials to create the sculptures when necessary. Popular literature documented these activities, and the sculpture garden became the "People's Art Gallery," enjoying great local fame.⁴

Construction of the sculptures has severely damaged the salt marsh environment. A study revealed that human activity in the salt marsh damages the vegetation, which destroys wildlife habitat. Natural recovery of the marsh, if human activity were to be curtailed completely, could take 50 years.⁵

Federal and State law protects plant and animal species which are at risk of becoming extinct. Both the Federal and State systems classify a species according to its numbers. The Federal system assigns a legal rank to endangered species, classifying them as endangered, threatened, proposed for endangered or threatened status, and

¹California Department of Parks and Recreation, East Bay Shoreline: Feasibility Study, December 1982, p. 10.

²California Regional Water Quality Control Board, Water Quality Control Plan: San Francisco Bay Basin (2), July 21, 1982, pp. 2-8.

³California Department of Parks and Recreation, East Bay Shoreline: Feasibility Study, December 1982, p. 14; Lisa Cohen, "Emeryville Crescent: The Sculpture Garden Controversy," in The East Bay Shoreline: Selected Environmental Issues, June 1982, p. 166.

⁴Lisa Cohen, "Emeryville Crescent: The Sculpture Garden Controversy," in The East Bay Shoreline: Selected Environmental Issues, June 1982, pp. 166-167.

⁵James K. Doyle, "Characteristics of Trampled Marsh Soil and Potential for Rehabilitation," in The East Bay Shoreline: Selected Environmental Issues, June 1982, pp. 155-162.

candidates for endangered or threatened status. In California, species are classified as endangered or rare. A species is considered "endangered" when the prospects of its survival and reproduction are in immediate jeopardy. It is "rare" when, although it is not presently threatened with extinction, it is found in such small numbers that it may become endangered if its environment worsens.¹ "Species of concern" are those which are found in relatively small numbers but which are not considered rare or endangered.

Preservation of the salt marsh community is a priority among local interests, as well as among regional, State, and Federal agencies. Within its boundaries, the Emeryville Crescent harbors a number of Federal- and State-listed rare and endangered animals. Many of these creatures depend upon the Emeryville Crescent as their sole habitat and would be seriously affected by further destruction of the salt marsh environment.

As shown in Figure IV-1, most regular inhabitants of the Crescent are found south of Temescal Creek where human intrusion is rare. Clearly, public access was not originally appropriate in this fragile environment. Yet many are still unaware of the potential impact, and public access has become a controversial issue. Public agencies with overlapping jurisdictions are divided on what type of access would be appropriate. Agencies responsible for developing public recreation and increasing access to the Bay tend to emphasize the recreational opportunities of the Emeryville Crescent. Those charged with protecting wildlife tend to cite the damage already caused by unauthorized public access and recreation, arguing against increased public access.

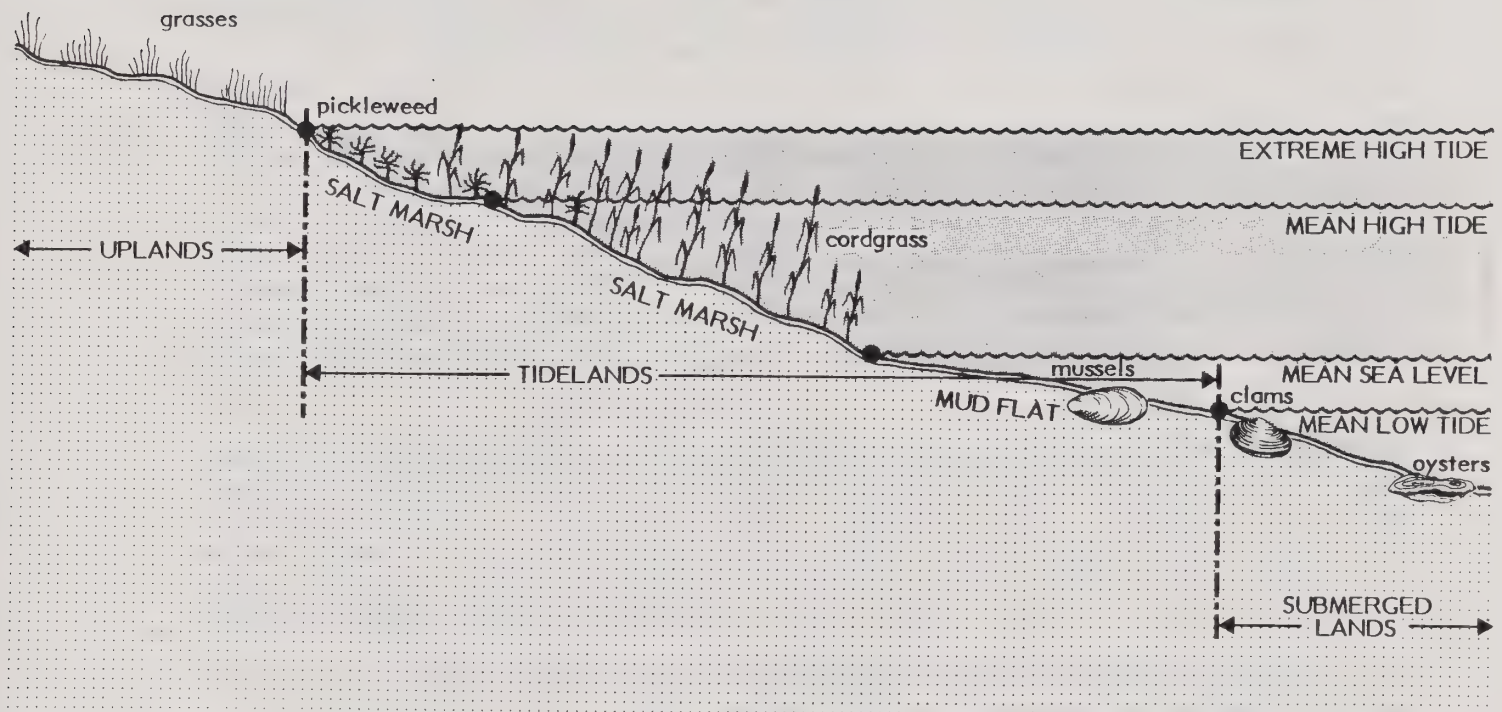
Plants and Animals

Plants. Salt marsh vegetation grows in zones which correspond to tidal elevation and frequency of salt water inundation, as shown in Figure IV-2. The vegetation which grows in each zone is related to the tolerance of the species to salt water. Most of the Crescent consists of mudflats, which are submerged except at low tide and slope gently upward toward the marshy shore. Just above this elevation, where salt water inundation occurs at high tide, typical salt marsh plant species can be found (see Table IV-1).²

The tidal zone grades abruptly into an "upland zone" above the high water line. Plants in the upland zone experience infrequent salt water immersion and are not as tolerant to brackish water. Some of the plants listed in Table IV-2, such as iceplant, were originally introduced in this zone for erosion control to protect the freeway.

¹California Department of Fish and Game, Natural Diversity Data Base, Rare and Endangered Plants and Animals in the Oakland West 7-1/2' Quadrangle, November 9, 1984.

²Abstracted from Greg R. Zitney, Principal, Western Ecological Services Company, correspondence to Bryan Grunwald, Hall Goodhue Haisley & Barker, June 4, 1985, Subject: Emeryville Waterfront Biological Survey; David Olson, "The Salt Marsh Harvest Mouse in the Emeryville Crescent Marsh," in *The East Bay Shoreline: Selected Environmental Issues*, June 1982, pp. 138-139; and Bodega Bay Institute, *The Crescent: An Environmental Assessment of the Emeryville Crescent*, June 1978.



Source: H. B. Goldman, Hayward Shoreline Environmental Analysis, HASPA, Hayward, 1973, in Bodega Bay Institute the Crescent: An Environmental Assessment of the Emeryville Crescent, 1978.

Figure IV-2
SALT MARSH TIDAL ZONE

There are no known rare or endangered plants in the Emeryville Crescent or in the City as a whole. The adobe sanicle (*sanicula maritima*) is a plant which once grew in the area. Presumed extinct in the Emeryville Crescent, it is listed as an endangered species in California and as a candidate for threatened status on the Federal listing. Santa Cruz tarweed (*holocarpha macradenia*) may exist in the vicinity. This plant species is listed as endangered in California and as a candidate for endangered status on the Federal lists.¹ The marsh itself is a fragile environment and has been identified for priority protection because of its importance to the Bay and the wildlife which inhabits it. The native pickleweed vegetation in the tidal zone is

¹ California Department of Fish and Game, Natural Diversity Data Base, Rare and Endangered Plants and Animals in the Oakland West 7-1/2' Quadrangle, November 9, 1984.

TABLE IV-1: EMERYVILLE CRESCENT TIDAL ZONE PLANTS

<u>Common Name</u>	<u>Botanical Name</u>
cordgrass	<i>Spartina foliosa</i>
pickleweed	<i>Salicornia</i> spp.
saltgrass	<i>Distichlis spicata</i>
alkali bulrush	<i>Scirpus robustus</i>
marsh gumplant	<i>Grindela humilis</i>

* * * * *

TABLE IV-2: EMERYVILLE CRESCENT UPLAND ZONE PLANTS

<u>Common Name</u>	<u>Botanical Name</u>
wild oat	<i>Avena fatua</i>
wild radish	<i>Raphanus satiras</i>
mustard	<i>Brassica</i> sp.
plantain	<i>Plantago lanceolata</i>
poison hemlock	<i>Conium maculatum</i>
Italian ryegrass	<i>Lolium multiforum</i>
wild barley	<i>Hordeum</i> spp.
sweet fennel	<i>Foeniculum vulgare</i>
thistles	<i>Cardus pycnocephalus</i> <i>Cirsium</i> spp. ¹
iceplant	<i>Mesembryanthemum</i> sp.
sweet alyssum	<i>Alyssum</i> sp.
broom	<i>Cytisus</i> sp.
coyote bush	<i>Baccharis pilulari</i> spp.
willow	<i>Salix</i> sp.

¹ Some species are included on the California Department of Fish and Game's "Species of Concern" list.

extremely sensitive to trampling and regenerates slowly.¹ In the northern portion of the Crescent, the mudflats are almost completely devoid of pickleweed because of the trampling which results from driftwood sculpture building.

Animals. Pickleweed and cordgrass of the tidal zone provide the primary vegetative habitat for many of the species which permanently inhabit the Crescent. These include many common rodents and small mammals. The weedy uplands of the Crescent are inhabited by migrating birds, as well as several birds which are common to urban environments. The spits at the mouth of Temescal Creek serve as roosts for some shore and water birds.² Bird species sighted frequently within the Emeryville Crescent include the great blue heron, yellow rail, Virginia rail, semipalmated plover, killdeer, black-billed plover, least sandpiper, western sandpiper, dunlin, short-billed dowitcher, Savannah sparrow, short-eared owl, and song sparrow, as well as egrets, ducks, and gulls.³

Marine life depends on the marsh and mudflats for its survival, either directly for food and shelter or indirectly for consumption of other marine creatures. The tidal mudflats are rich in invertebrate life, including worms, nematodes, crabs, and several species of clams, oysters, and mussels. These generally are found in the submerged areas and tidal mudflats.⁴ The waters of the Bay also host species of perch, flounder, smelt, and anchovy.

The fresh water flow from Temescal Creek mixes with the salt water of the marsh as it flows into the Bay. This action creates a fragile transition zone between salty and fresh water, crucial for the survival of anadromous fish. This location in the Crescent has been specifically noted as a spawning ground for striped bass.

A list of regularly occurring and visiting animals in the Emeryville Crescent is presented in Table IV-3, and includes several rare and endangered species:

- Presence of the salt marsh harvest mouse (Reithrodontomys raviventris), identified on both State and Federal endangered species lists, has been documented in the Emeryville Crescent. This is the only rodent which is able to spend its entire life within the salt marsh environment, and it is endemic to the Bay Area. Tall, thick pickleweed serves as its optimal habitat, providing the bulk of its diet and protection from predators. The

¹David Olson, "The Salt Marsh Harvest Mouse in the Emeryville Crescent Marsh," in *The East Bay Shoreline: Selected Environmental Issues*, June 1982, p. 142.

²Abstracted from Greg R. Zitney, Principal, Western Ecological Services Company, Correspondence to Bryan Grunwald, Hall Goodhue Haisley & Barker, June 4, 1985, Subject: Emeryville Waterfront Biological Survey; David Olson, "The Salt Marsh Harvest Mouse in the Emeryville Crescent Marsh," in *The East Bay Shoreline: Selected Environmental Issues*, June 1982, pp. 138-146; and Bodega Bay Institute, *The Crescent: An Environmental Assessment of the Emeryville Crescent*, June 1978.

³City of Emeryville, *Final Environmental Impact Report on the Amended Redevelopment Plan*, August 1982, p. 122.

⁴California Department of Parks and Recreation, *East Bay Shoreline Feasibility Study*, December 1982.

TABLE IV-3: ANIMALS OF THE EMERYVILLE CRESCENT

Alameda salt marsh song sparrow	Forster's tern	Robin
Allen's hummingbird	Fox Sparrow	Rock dove
American avocet	Gadwall	Rough-winged swallow
American bittern	Glaucous-winged gull	Royal tern
American coot	Golden-crowned sparrow	Ruby-crowned kinglet
American golden plover	Great blue heron	Ruddy duck
American kestrel	Great egret	Ruddy turnstone
American widgeon	Greater scaup	Rufous hummingbird
Anna's hummingbird	Greater yellowlegs	Salt marsh harvest mouse
Arctic tern	Green-winged teal	Sanderling
Barn swallow	Heermann's gull	Savannah sparrow
* Barrow's goldeneye	Horned grebe	Semipalmated plover
Bat	House cat	Sharp-tailed sandpiper
Belted kingfisher	House finch	Short-billed dowitcher
Black phoebe	House mouse	* Short-eared owl
Black turnstone	House sparrow	Snowy egret
Black-billed plover	Jackrabbit	* Snowy plover
Black-bellied plover	Killdeer	Song sparrow
Black-necked stilt	Knot	Sora
Bonaparte's gull	Least sandpiper	Spotted sandpiper
Brandt's cormorant	Lesser goldfinch	Starling
Brewer's blackbird	Lesser scaup	Striped bass
Brown pelican	Lesser yellowlegs	Surf scoter
Brown towhee	Long-billed curlew	Surfbird
Brown-headed cowbird	Long-billed dowitcher	Thayer's gull
Bufflehead	Long-billed jaeger	Tree swallow
** California black rail	Mallard	Turkey vulture
*** California clapper rail	Marbled godwit	Vagrant shrew
* California gull	Mew gull	Violet-green swallow
*** California least tern	Mole	Virginia rail
Canvasback	Mourning dove	Vole
* Caspian tern	Mud snail	Wandering tattler
Cinnamon teal	Northern phalarope	Water pipit
Cliff swallow	Norway rat	Western Fence lizard
Common egret	Oldsquaw	* Western grebe
Common flicker	Orange-crowned warbler	Western gull
Common gallinule	Ornate shrew	Western harvest mouse
Common goldeneye	* Osprey	Western meadowlark
* Common loon	Parasitic jaeger	Western sandpiper
Common scoter	Pectoral sandpiper	Whimbrel
Common snipe	Pintail duck	White pelican
Common tern	Pocket gopher	White-crowned sparrow
Dark-eyed junco	Rat	White-throated swift
Deer mouse	Red phalarope	White-winged scoter
* Double-crested cormorant	Red-breasted merganser	Willet
Dublin	Red-tailed hawk	Wilson's warbler
Eared grebe	Red-winged blackbird	* Yellow rail
* Elegant tern	Redhead	Yellow-rumped warbler
Emperor goose	Ring-billed gull	

Source: Bodega Bay Institute, The Crescent: An Environmental Assessment of the Emeryville Crescent, June 1978; Greg R. Zitney, Western Ecological Services Company, correspondence to Bryan Grunwald, Hall Goodhue Haisley & Barker, June 4, 1985 (Subject: Emeryville Waterfront Biological Survey).

* On "Species of Concern" list.

** California listed as rare.

*** California and federal listed as endangered.

Note: Bodega Bay Institute Study includes the portion of the Crescent which is in the City of Oakland.

harvest mouse exists mainly south of the Emeryville border, where pickleweed grows thickly. Trampling of pickleweed in the sculpture garden mudflats near Temescal Creek has destroyed most of its habitat within Emeryville.

- The California clapper rail (Rallus longirostris obsoletus) is likely to reside where marsh grass is predominant. This bird was nearly extinct in 1913, before the Migratory Bird Act was enacted, which helped increase its numbers.¹ It is listed as endangered on Federal and California lists.
- The California black rail (Laterallus jamaicensis coturniculus), a rare species on the State list and a candidate for Federal listing as threatened (Category 2), has been observed.
- A stable population of the California least tern (Sterna antillarum browni), endangered on both State and Federal lists, is known to exist at the Alameda Naval Air Station and visits the Crescent during the summer breeding season.
- The endangered California brown pelican (Pelecanus occidentalis californicus) is a common sight from summer through late fall.

The peregrine falcon (Falco peregrinus anatum), also an endangered species, could occasionally forage in the Crescent. The snowy plover (Charadrius alexandrinus), double-crested cormorant (Phalacrocorax auritus), white pelican (Pelecanus erythrorhynchos), long-billed curlew (Numenius Americanus), short-eared owl (Asio flammeus), song sparrow (Melospiza melodia), and several other birds (listed on Table IV-3) are among the "species of concern" found along the greater East Bay shoreline. The Crescent is thought to be the only location on the North American Pacific Coast where the arctic tern has been known to land on shore.²

Public Trust

When California entered the Union in 1850, it took ownership of all tidal and navigable waters and the lands under them to hold in public trust for the people of the State. Notwithstanding this trust, large tracts of land were sold to private parties by the Board of Tide Land Commissioners (BTLC), created in 1868 to take possession of

¹ California Department of Fish and Game, Natural Diversity Data Base, Rare and Endangered Plants and Animals in the Oakland West 7-1/2' Quadrangle, November 9, 1984; California Department of Parks and Recreation, East Bay Shoreline: Feasibility Study, December 1982.

² California Department of Parks and Recreation, East Bay Shoreline: Feasibility Study, December 1982, p. 12; Bodega Bay Institute, The Crescent: An Environmental Assessment of the Emeryville Crescent, June 1978, p. 26.

submerged and tidal lands and sell lots within its boundaries.¹ Figure IV-1 illustrates the boundaries of the tidal lands that were "sold."

Abuses in the sale of tidelands led to a law in 1879 which prohibited the sale of these lands to private parties within two miles of an incorporated City. The law also stated that the public right-of-way must not be obstructed on these waters when they are required for a public purpose. This, in effect, placed tideland areas (generally land below the mean high tide line) in what is known as the "public trust."²

In City of Berkeley v. Superior Court, 26 Cal 3d 515 (1980), the court ruled that the State is the owner of the public trust easement over submerged lands and tidelands conveyed by BTLC deeds. Private ownership of the wetlands is restricted to the underlying fee title only. When an exercise of the trust is for a valid purpose such as open space, passive recreation, wildlife habitat or water usage, the State does not need concurrence of adjoining or underlying fee owners. Furthermore, the State is not required to compensate the private fee owner for diminution in the number of uses to which the underlying fee can be put, as exercise of the trust does not represent a "taking" of the property.³ The court also ruled that BTLC parcels which were filled and no longer physically considered tidelands as of 1980 would not be subject to the trust, although they still are subject to public access pursuant to BCDC permit requirements.⁴

Emeryville has requested the State Lands Commission to determine its rights to exercise the public trust over the Bay shoreline areas, particularly the Emeryville Crescent. The State Lands Commission has responded that it is the City's prerogative to exercise the trust, and that there are no likely impediments to Emeryville's doing so.⁵ The City is currently investigating the extent of the public trust over privately owned property fronting on the Bay and the public rights under this trust. This study is being undertaken in consultation with the State Lands Commission. When the study is complete, Emeryville will be better able to amend this Plan, if necessary, to respond to public and private rights and needs. The following policies apply to all publicly owned property on the Bay, and will be considered for application to privately owned property on the Bay.

Objectives

A. Preserve the City's biological resources.

¹ California State Lands Commission, Public Trust Rights and Needs in the Albany Baylands, October 1982, pp. 16, 20.

² California Department of Parks and Recreation, East Bay Shoreline: Feasibility Study, December 1982, p. 14.

³ California State Lands Commission, Public Trust Rights and Needs in the Albany Baylands, October 1982, pp. 20-21.

⁴ Ibid., p. 16.

⁵ Michael R. Valentine, Staff Counsel III, California State Lands Commission, November 28, 1984.

- B. Protect the ecosystem of the Emeryville Crescent and the San Francisco Bay.
- C. Promote use of natural areas for educational purposes if such use does not impair the area's biological value.
- D. Provide undeveloped open space for nature study, protection of endangered species, and preservation of wildlife habitat.

Policies

- 1. Wildlife in general and endangered species in particular shall be protected, and wildlife habitat along the Bay shoreline shall be preserved and enhanced.
- 2. Landfill projects shall be strongly discouraged. Marshes and mudflats are valuable and scarce resources and should not generally be sacrificed to urban development. Filling of the Bay shall be allowed only under the following conditions:
 - No reasonable alternative exists.
 - Substantial public benefits will be realized.
 - Public access will be provided to the Bay at no cost to the public.
 - Proposals will be evaluated thoroughly for their effects on biological resources and safety hazards to human occupancy.
 - Endangered species will not be adversely affected, either during construction or upon completion of the project.
 - The proposal is consistent with BCDC policies and receives the approval of State and Federal wildlife management agencies.
- 3. Any alteration to the Bay shoreline or to Temescal Creek should be conducted in coordination with the State Department of Fish and Game and the U.S. Fish and Wildlife Service. Proposed alterations shall be analyzed for their impacts on wildlife and marine life.
- 4. Public access to the Emeryville Crescent shall be restricted to allow regeneration of the native vegetation and restoration of the wildlife habitat. Where access is provided, it should be limited to areas north of Temescal Creek, and it should be provided by catwalks or boardwalks over the vegetation to assure that people and their pets are separated from the wildlife that inhabits the Crescent. Walkways should be constructed only where construction activities will not cause significant harm to the Crescent environment and should be built primarily of natural materials, such as wood, to visually complement the natural environment.
- 5. An educational or interpretive center should be provided near the Emeryville Crescent to inform the public of the importance of this habitat to the Bay ecosystem and to bird species which inhabit it permanently and seasonally.
- 6. The sculpture garden should be relocated to a less environmentally sensitive area or contained within a smaller area than it presently occupies. The location

should have as much public visibility as possible, but should not cause further environmental degradation of the Crescent. Although ideally it should be removed completely from the Emeryville Crescent, the sculpture garden could occupy the northernmost portion of the Crescent, provided that there is no significant environmental damage and access is restricted beyond that point.

The artist community should be informed about the degradation caused by sculpture building, and their help should be enlisted to relocate the sculpture garden, identify and inform sculpture builders, and promote ecologically sound activities.

Implementation

1. Maintain the Emeryville Crescent as a wildlife refuge (City, U.S. Fish and Wildlife Service, California Department of Fish and Game, BCDC, State Coastal Conservancy, City of Oakland, private conservation organizations).
2. Continue to review the application of the public trust on waters and tidelands within the City; when complete, exercise the public trust (City, State Lands Commission).
3. Construct physical barriers to discourage public access in the Emeryville Crescent; construct ecologically sound access and aesthetically appropriate trails to the shoreline of the Bay (City, State Coastal Conservancy). In order to provide parking in convenient locations to trails and viewing points, consider negotiating an agreement with private landowners on the Peninsula, if necessary and feasible.
4. Require a thorough assessment of proposed alterations to Temescal Creek or the Bay shoreline and a review by all concerned organizations (City, BCDC, California Department of Fish and Game, U.S. Fish and Wildlife Service, COE, private conservation organizations). Review all public and private projects which are adjacent to the Bay shoreline for compliance with applicable policies.
5. Initiate educational programs which inform the public of the unique resources of the Emeryville shoreline and encourage nature study (City, State Coastal Conservancy, BCDC). Develop an educational or interpretive center to be located close to the Emeryville Crescent. Consider use of the existing City Hall as an interpretive center if City offices are relocated.

D. AIR QUALITY

Introduction

Air pollution represents a major environmental problem in the Bay Area. Most air pollutants are caused by human activities such as motor vehicle use or industrial emissions. Some pollutants directly threaten human health; others discolor the air or reduce visibility.

Air quality in Emeryville is generally good due to clean air blowing off the ocean and San Francisco Bay. These are predominantly southwesterly winds (37%) with a significant amount of calm (32%). These same winds can, however, contribute to problems at downwind sites such as the Diablo and Santa Clara Valleys.¹

The passage of the Air Quality Act of 1967, subsequently known as the Clean Air Act, provided the first national program to control pollution from automobiles and stationary sources. Under the provisions of this Act, states submit plans for control of air quality. California began setting standards in 1969 with the passage of the Mulford-Carrell Act. The State of California employs more stringent regulations than Federal requirements for vehicle emissions under a program administered by the Air Resources Board.

Ambient Air Quality

In the Bay Area, Federal ambient air quality standards for ozone and carbon monoxide are exceeded, and the Federal standard for total suspended particulates is exceeded on occasion. Because these air quality standards are not being met, the entire Bay Area has been designated by the U.S. Environmental Protection Agency as a "non-attainment" area for these pollutants. The 1982 Bay Area Air Quality Plan, prepared by the Association of Bay Area Governments (ABAG) and other government agencies, identifies measures to reduce emissions from both stationary sources and motor vehicles to levels which will result in attainment of air quality standards by 1987.

The Bay Area Air Quality Management District (BAAQMD) guides air quality planning in the Bay Area, and documents and enforces compliance with standards. Any company which builds or expands a facility in the Bay Area must first obtain a permit from the BAAQMD.² The District regulates the quantity and type of emissions allowed from all facilities.

Over 90% of the carbon monoxide in the air is emitted from vehicular sources. Local, unmonitored exceedances of standards for this pollutant can potentially occur where traffic is congested and cars are idling for long periods of time. Particulates, sulfur oxides, and nitrogen oxides often are emitted from industrial facilities, and are mainly the result of incomplete fuel combustion. Nitrogen dioxide and ozone are major ingredients in the formation of photochemical smog, which creates a brown discoloration in the air.

Monitoring stations closest to Emeryville are located in Oakland and Richmond. Standards were not exceeded at these stations for any of the regulated pollutants in 1984, the latest year for which information is available. Nevertheless, while air quality actually is a regional problem, the land use, circulation, and growth decisions made by local communities such as Emeryville will significantly affect the outcome of regional air quality planning.

¹City of Emeryville, Final Environmental Impact Report on the Amended Redevelopment Plan, August 1983, p. 75.

²Bay Area Air Quality Management District, Air Quality Handbook, 1983-1984.

Objectives

- A. Minimize public health hazards due to air pollution.
- B. Minimize the generation of air pollutants from projected growth within the City.
- C. Reduce the generation of air pollutants where possible.

Policies

- 1. The efforts of local, regional, State, and Federal agencies to reduce air pollution problems shall be supported.
- 2. Alternatives to private motor vehicles shall be promoted. Pedestrian and bicycle pathways should be provided to connect residences with shopping areas, businesses, and public facilities. New development should support public transit service.
- 3. Land uses should be organized to reduce travel distance and trip generation. New land uses should encourage the use of non-motorized travel, allowing a mix of residential and non-residential uses, where appropriate, to reduce trip lengths, and encouraging compact development (see Land Use Element).
- 4. Smooth-flowing traffic through intersections should be assured (see Circulation Element). Carbon monoxide emissions are directly related to intersection congestion and can be minimized through maintenance of stable flow in intersections.
- 5. All uses that discharge air pollutants shall meet BAAQMD air quality standards.

Implementation

- 1. Review proposed projects to reduce negative air quality impacts and coordinate with the BAAQMD to ensure compliance with BAAQMD policies (City, BAAQMD). Require permits from the BAAQMD prior to allowing any use which will discharge pollutants. Promote site design which will reduce localized air pollution impacts. This can include locating areas of intensive human activities well away from significant emission sources, and use of ground contouring and landscaping to mix, filter, and disperse pollutants, where feasible.
- 2. Develop transportation systems which utilize mass transit, pedestrian, and bicycle transportation as alternatives to automobile use (City, MTC, transit agencies). Develop safe and efficient bicycle and pedestrian transportation systems, including adequate bicycle lanes on public streets, and trails restricted to bicycle and pedestrian use (see Circulation Element). Permit more intensive development densities along existing and proposed transit corridors to encourage use of and access to public transportation.
- 3. Require installation of necessary traffic improvements prior to occupancy of new development (City).

E. ENERGY

Introduction

While an Energy Element is not specifically mandated by State law, Government Code Section 65303(k) states that the General Plan may include "such additional elements dealing with other subjects which, in the judgment of the planning agency, relate to the physical development of the county or City." The need to conserve energy and develop new sources is a pressing national problem. Local government agencies are not responsible for or capable of locating new sources of fossil fuels; they can, however, encourage development or use of renewable sources of energy such as solar and wind power. Local governments can also influence the amount of energy that is consumed.

In fact, it is the local governments, rather than Federal or State agencies, which will be most effective in directing energy uses in the years ahead, since locally initiated programs are implemented more quickly and effectively than State or Federal programs. At the local level, actions can be taken more quickly and can be tailored to the community's needs and regulatory processes. Local governments can exert direct control or influence over several major determinants of energy use, such as land use and infrastructure patterns, building type and construction, and behavior. It is for this reason, and to highlight the special significance of this issue, that the City of Emeryville is including a separate Energy Element in its General Plan. Energy use and conservation, as directed under the policies of this element, is related closely to the policies of the Land Use and Circulation Elements.

In some cases, it is very easy and inexpensive to implement an energy efficiency option initially and much more difficult and costly to do so later. This is especially true of passive design measures. It may cost nothing to provide for solar access in a new structure but may be impossible to do so once it has been built. Since a residential structure built today will probably still be standing 75 or 100 years from now, it is critical that it be built energy-efficient.

Another example of the long-term energy implications of local government decisions is the relationship of a given land use pattern to the transportation system required to service it. A pattern characterized by large residential lots will virtually guarantee dependence on the automobile. In contrast, the concentration of the same number of residents on smaller lots within walking distance (approximately 1,000 feet) of major streets will generate a level of transit ridership sufficient to guarantee self-supporting public transit (i.e., fare box revenues which cover costs). In both cases, the type and overall intensity of land use is the same. However, a concentrated development pattern is more conducive to a successful transportation system.

Future Energy Strategy

Increased growth within the City will result in increased energy use. The primary goal of Emeryville's energy policies should be reduced reliance on non-renewable, imported sources of energy, while encouraging use of alternative sources of energy such as passive and active solar heating systems. The effort to achieve this goal

should be aimed both at (1) conservation, i.e., reducing overall consumption rates; and (2) production, i.e., using energy produced in Emeryville, preferably from renewable sources such as solar or wind energy. In a sense, production or use of energy from renewable sources is the ultimate conservation tool. Conservation of non-renewable resources, while an essential short-term strategy, does not produce energy, but rather rations the use of a finite resource and merely delays its ultimate depletion.

Local governments can implement energy consumption and conservation programs more effectively than State or Federal governments. This is because they can exert direct control or influence over several major determinants of energy use, including:

- **Land Use and Infrastructure Patterns.** Large-scale land use policies and decisions can determine locations for concentrations of population which are in close proximity to housing, employment, services, and public transportation to reduce the population's dependence on private automobiles. The local infrastructure and land use patterns will also determine the extent to which major alterations in the supply of oil (such as the 1974 gasoline shortage) disrupt the lives of residents.
- **Building Type and Construction.** Local regulations can control the location, size, height, and siting of structures, and may require passive or active solar design of hardware which restricts or controls energy demand for heating, lighting, or water usage. Typical programs include the adoption of ordinances to require that the thermal efficiency of existing structures be upgraded, that standards affecting new construction be modified to better address local climatic conditions, that solar water heating be required in new and/or existing structures, and that solar access to existing or potential solar collectors be provided and protected.
- **Behavior.** This is one of the most important determinants of energy use. Local government can implement educational programs and regulations intended to facilitate behavioral changes, such as turning off unnecessary lights and electrical appliances, much more easily than can State or Federal agencies.

Objectives

- A. Minimize the consumption of non-renewable energy.
- B. Encourage the development and use of alternative energy sources.
- C. Promote energy efficiency and conservation.

Policies

- I. Energy-efficient land use relationships shall be promoted. New housing should be located near commercial and industrial employment centers, shopping areas, and services; convenient access should be provided to public transportation to reduce the amount of energy consumed in transportation (see Land Use Element).

2. Alternatives to the personal vehicle shall be provided and promoted. Mass transit, van pooling, and car pooling shall be supported and encouraged. Non-motorized transportation shall be encouraged by promoting the development of bicycle and pedestrian paths. Special emphasis should be given to routes between residential areas and centers of shopping and employment (see Circulation Element).
3. Energy conservation and the use of renewable energy resources shall be promoted. The following energy conservation techniques should be incorporated into a comprehensive, coordinated effort by the City to promote greater energy efficiency.

- General

- Encourage implementation of basic conservation methods in all new and existing structures through an education program.
- Encourage mixed land uses to reduce the average length of trips and reliance on automobiles.
- Install sodium-vapor or other energy-efficient street lights.
- Encourage use of public transportation.
- Review site plans for solar access to residential dwellings; use landscaping to block winds, provide shade in summer, and allow solar access in winter.

- Residential: New Development

- Locate housing near public transportation, employment, and services.
- Require "passive" solar building design:
 - Largest wall and window areas should face south; kitchen and living rooms should be located on this wall.
 - Glazed areas should be very limited on north- and east-facing walls.
 - Use of overhangs or eaves above south-facing windows will prevent summer overheating, while still allowing winter sun access.
 - Design to allow "through" ventilation from windows and doors.
- Encourage common walls and clustered residential developments.
- Reduce paved areas.
- Require drought-tolerant landscaping and water-efficient irrigation systems.

- Residential: Retrofit
 - Insulate.
 - Weather-strip doors and windows.
 - Hang heavy draperies.
 - Install solar heat collection system.
 - Non-Residential: New Development
 - Require co-generation (use of waste heat) for industrial sites as a means of more efficient fuel utilization.
 - Encourage solar energy for process heat and water heating for industrial buildings.
 - Restrict average illumination in commercial buildings to approximately 2.0 watts per square foot.
 - Reduce general commercial lighting (decorative and advertising).
 - Encourage transportation systems management (TSM) programs to reduce fuel consumption by private vehicles.
 - Develop building energy management programs to reduce energy use during off-peak hours.
 - Encourage alternate work hours to reduce peak-load energy requirements.
 - Commercial: Retrofit
 - Reduce overall illumination and concentrate "task" lighting where needed.
 - Insulate where appropriate.
4. City government and local public agencies should include energy efficiency, conservation, and use of renewable energy resources as criteria for evaluating and ranking capital and operational expenditures, where feasible.
 5. The use of recycled materials shall be supported, and the development of recycling facilities shall be encouraged. Although the actual amount of energy consumed indirectly (i.e., that which is embodied in products) in Emeryville cannot be readily determined at this level of detail, it is known that the amount of energy used to recycle materials is much lower than the amount used to manufacture the same materials. The amount of energy consumed in the City can be indirectly reduced through promotion of a recycling program. The solid waste management plan should include provisions for recycling programs and facilities. The City should solicit the involvement of citizens within the community or in neighboring communities to develop a workable recycling program.

Implementation

1. Review proposed projects through the environmental impact report process to identify opportunities to include energy conservation techniques in the design (City).
2. Adopt an energy conservation ordinance or an amendment to the Building Code which promotes energy conservation (City).
3. Periodically review energy conservation standards for new residential construction, as contained in Title 24 of the California Administrative Code, to identify opportunities for adopting standards which more closely respond to local conditions, especially in the area of passive design to reduce heat loss. Energy conservation standards should specify minimum performance criteria in terms of winter heat loss and summer heat gain per unit of floor area in mechanically heated or cooled residential and commercial buildings.
4. Implement Transportation Systems Management (TSM) programs as discussed in the Circulation Element (City, AC Transit, BART, developers). Provide transit coordination and investment of public funds for transit improvements if the level of development warrants such actions (see Circulation Element).
5. Develop a recycling program (City, California Solid Waste Management Board, private organizations). Review proposed development and suggest design features which would enable a recycling program, such as inclusion of space for storing cans, bottles, and newspapers within dwelling units, and provisions for dumpsters to store recyclable items in large residential and commercial projects. Encourage citizen involvement in recycling program operation.

F. CULTURAL AND HISTORIC RESOURCES

Introduction

Historic resources provide us with a link to the people and cultures of the past. Preservation of archaeologic, historic, or architecturally significant sites can enrich Emeryville's cultural heritage and identity. Scientific study of these sites can provide clues to human behavior in general and to past culture in particular. If development is properly planned and designed with these resources in mind, the City may benefit economically as well.

According to the Public Resources Code (Section 5020.1), historic resources:

"... includes but is not limited to any object, building, structure, site, area, or place which is historically or archaeologically significant, or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California."

This element seeks to protect archaeological, historical, and architectural resources, and to exploit these resources, where appropriate, to develop Emeryville's cultural

identity without sacrificing its integrity. The presence of significant sites or structures in an area proposed for development does not necessarily mean that development cannot occur. Extremely important archaeological sites should not be disturbed; but on many sites, development can be designed to avoid destruction of culturally, scientifically, or religiously significant remains. For important buildings, the objective is not normally to leave them undisturbed, but to encourage their use for current activities while preserving or enhancing their character and integrity.

Prehistoric Resources¹

The first inhabitants of the San Francisco Bay Area were the Costanoan Indians, who lived along the Bay's shoreline more than 4,000 years ago. Marsh land, particularly where freshwater creeks entered the Bay, were desirable home sites for the Indians. This type of environment was found along the original Bay marshlands, near the Southern Pacific Railroad tracks (see Figure V-11).

One remnant of the Indian occupation of this locale is the shellmounds along the waterfront. The Emeryville Shellmound--one of the largest in the Bay Area--was estimated to have been 1,000 feet long, 300 feet wide, and 22 feet high. It was located east of Interstate 80 in the vicinity of Temescal Creek. The railroad track may traverse a portion of the mound remnant, which is approximately 8.5 feet below the surface.² The shellmound is listed in the California Inventory of Historic Resources³ and in California Historic Landmarks.⁴ Archaeological excavations of the shellmounds began as early as 1902. Several other sites in the vicinity of the creek have been recorded.⁵

The portion of Interstate 80 that runs through Emeryville has been archaeologically surveyed, as has a small area near Temescal Creek. These surveys did not identify any archaeological resources. Shellmounds may also occur in marsh areas with no

¹Summary largely abstracted from Christian Gerike, Assistant Coordinator, California Archaeological Inventory, Sonoma State University, correspondence dated December 2, 1984.

²City of Emeryville, Final Environmental Impact Report on the Amended Redevelopment Plan, August 1983, p. 131.

³California Department of Parks and Recreation, California Inventory of Historic Resources, 1976.

⁴California Department of Parks and Recreation, California Historic Landmarks, 1982.

⁵Caltrans, Environmental Planning Branch, Archaeological Survey Report for Proposed High Occupancy Vehicle Lanes from Bay Bridge to Carquinez Bridge, May 1982.

freshwater source immediately adjacent; therefore, it is moderately to highly probable that other unrecorded prehistoric shellmounds exist in the vicinity of the original shoreline. This possibility is greatest near the northern City limits, where an 1878 map depicts a creek entering the Bay. Prehistoric sites prior to the rising of the Bay about 5,000-6,000 years ago may exist below the current Bay level.

Based on archaeological records, the California Archaeological Inventory has determined that the shellmounds in the Emeryville area have been destroyed. However, there have been no studies to confirm this, and there is a high possibility that subsurface deposits of these sites, or of other unrecorded sites, still may exist in the areas of old marshland and creeks.

Later History and Culture¹

Colonists of the Spanish Empire first introduced agriculture and domesticated animals to the region in 1820. Luis Maria Peralta received the first land grant of more than 48,000 acres, encompassing an area from Emeryville northward to include what is now the northern portion of Alameda County. Mexican citizens settled the area from 1822 to 1846.² The mouth of Temescal Creek was used at that time as a landing for the Peralta family's Rancho San Antonio.

The California Gold Rush attracted thousands of immigrants, and the Peralta family could no longer retain control of the entire land grant. Structures had been built throughout Emeryville, and by 1878, most of the City had been urbanized. The East Bay's oldest steel mill, Judson Steel, began operations in 1882, initiating the City's extensive industrial development.

Historic Buildings. None of the older structures in the City are identified or registered as historic properties by the State Office of Historic Preservation or the National Register of Historic Places. However, there are several areas and structures with local historical and/or architectural merit. These are not necessarily of regional significance, but they do identify and characterize the City's heritage.

A number of the brick industrial buildings dating from the early 20th Century are in excellent physical condition. These buildings were built in an era of extensive industrial expansion nationwide which corresponded to the extension of railroad lines, and represent an important point in Emeryville's history. They are concentrated in the vicinity of Park Avenue, 45th Street, Hollis Street, and Horton Street.

Among the buildings of particular interest are Trader Vic's, Pelco Distributors, and the artist's co-op. Town Hall, at Hollis Street and Park Avenue, is an ornate domed Victorian built in 1890. Although it is not a particularly remarkable example of the architecture of its period, it remains the most important feature of Emeryville's historical development.

¹Largely abstracted from Christian Gerike, op. cit.

²California Department of Parks and Recreation, East Bay Shoreline: Feasibility Study, December 1982, p. 13.

Several neo-classic structures can be found along San Pablo Avenue near Yerba Buena Avenue and MacArthur Boulevard. These include the Bank Club, Ritz Hotel, J. C. Paper Company, the MacKinnon Building and the Golden Gate Key and Lock Company. The Triangle contains groups of excellent craftsman bungalows and Victorian structures.¹ The Veteran's Memorial Building, a post-World War I structure which displays art deco and modern details, currently houses the Senior Citizen Center.

Along Powell Street, several noteworthy buildings have been reused for different purposes; these include the neo-classic Hamar Brothers Tile building and the office building at 1475 Powell Street. Balaam Brothers, originally Cook Stove Oil Company, has been noted as an excellent example of vernacular architecture, described as ". . . a 1930s wood radio set stuccoed and blown up to building size."² The Town House on Doyle Street, a 1920s speak-easy,³ is currently used as a restaurant. Westinghouse and ITT Grinnell, both large industrial buildings, are structurally sound and suitable for re-use. Four-story Westinghouse boasts large windows and an ornamented facade; ITT Grinnell displays a curiously turreted facade which marks the edges of rows of clerestory windows.

Properties which contributed significantly to the historical or cultural development of Emeryville or the region, especially those which have not been significantly altered, are likely to be eligible for listing in the National Register of Historical Places, California Historic Landmarks, or the California Inventory of Historic Resources. The Town Hall is a candidate for listing on the National Register; many of the industrial buildings dating from the 20s or 30s may also be eligible.⁴ The California lists automatically include properties listed in the National Register.

One more year of funding is available under the California Parks and Recreation Facilities Act of 1984 (California Public Resources Code, Division 5, Chapter 1.691) for acquisition, development, rehabilitation or restoration of historical resources. Grants may fund preservation projects and the costs of planning and interpretation. The program is administered by the Office of Historic Preservation of the California Department of Parks and Recreation. Publicly owned properties which meet criteria for the National Register are eligible for funding.

California Historic Landmarks and buildings on the National Register do not have to meet current building code standards, except for those which protect public health and safety. Instead, these properties can use the State Historic Building Code. The

¹City of Emeryville, Final Environmental Impact Report on the Amended Redevelopment Plan, August 1983, p. 131, from Mark A. Wilson, *East Bay Heritage: A Potpourri of Living History*, California Living Books, San Francisco Examiner, 1979.

²David Gebhardt, et al., *A Guide to Architecture in San Francisco and Northern California*, 1973.

³City of Emeryville, op. cit.

⁴Don Napoli, State Office of Historic Preservation, February 6, 1986.

code that was in force at the time the building was constructed may be used as alternate.¹ Federal tax investment credits of up to 25% are available for restoration or rehabilitation of buildings which are currently or will be listed on the National Register. Older, non-certified structures can receive from a 15% tax credit for structures more than 30 years old to a 20% tax credit for structures more than 40 years old, if they are substantially rehabilitated and if 75% of existing external walls are retained.² Thus, developers are often provided economic incentives to preserve local historic resources at little or no cost to local government. Such investment often spurs additionally investment, ultimately resulting in financial advantage for the community.

To be added to the National Register, the State Office of Historic Preservation and other State and Federal Agencies complete a nomination procedure which is often initiated by a community. A description of the property, including a statement of its significance, are among the requirements in the forms which are submitted to the Historic Preservation Office, to be sent to Washington following additional research. Abbreviated information provided by the property owner can receive a preliminary determination of eligibility from the State if the property owner desires an early assessment of the possible tax benefits.

Additions to the California Inventory of Historic Resources are normally proposed by a community following a citywide survey. Often several groups of buildings are added to the list as a result. The California Landmarks proposals require less detail than the California Inventory.

Objectives

- A. Protect Emeryville's historic and cultural resources.
- B. Utilize Emeryville's cultural heritage in the City's future development.

Policies

1. Significant archaeological resources should be identified and protected from destruction, prior to issuance of building permits on the affected properties. Anything which is found after construction begins should be assessed, and protected or removed if necessary and appropriate.
2. No cultural or historical resources shall be knowingly destroyed through City action.
3. Interest in cultural and historic resources should be promoted. Emeryville's existing cultural resources and knowledge of historical resources should be utilized as appropriate to develop Emeryville's community identity and promote scientific and cultural understanding without destroying the resources or

¹Ibid.

²City of Emeryville, Final Environmental Impact Report on the Amended Redevelopment Plan, August 1983, p. 132.

damaging their integrity. For example, a feature describing the Costanoan civilization may be incorporated into any parks or other public facilities in the vicinity of Shellmound Street and Temescal Creek, provided that further remnants which still may exist are not at risk of vandalism or unauthorized excavation.

4. Reuse of architecturally interesting industrial buildings should be encouraged, particularly where there are many such buildings grouped together.

Implementation

1. Retain a qualified archaeologist during construction to conduct on-site monitoring for the existence and extent of potential archaeological resources in areas known to have a high potential for such resources; for example, in the vicinity of Temescal Creek, east of the railroad track; the historic Bay shoreline; or the creek which previously entered the Bay in the northern portion of the City (private developers).
2. Require an EIR for those projects which could have a significant effect on archaeological resources (City). A field survey by a qualified archaeologist may be required, at the developer's expense, to determine the presence, extent, condition, and significance of the potential resources. The archaeologist should determine the potential impact of the project on the resources and possible mitigation measures to avoid or reduce those impacts. This survey should be conducted prior to issuance of final project approval, to avoid unnecessary delays once the project is underway.
3. Encourage participation by interested citizens and professionals in identification of and recommendations for potential historic or cultural sites or buildings (City, citizens' organizations). Request California Historical Landmark Status for those properties which appear eligible. This program should be initiated by demonstrated community interest and should be supported by the City following completion of an inventory of historic resources.
4. Adopt an archaeologic/historic preservation ordinance which specifies procedures to be followed in the event that significant resources are discovered during the development process (City). Incorporate recommendations from the archaeological or historical survey.
5. Create a historic district overlay for properties in the vicinity of Park Avenue and Horton Street to promote development which preserves the architectural integrity of the area (City).
6. Encourage owners of eligible historic properties to apply for State and Federal registration for these sites and to participate in tax incentive programs for historic restoration (City, landowners, State and Federal agencies).
7. Coordinate with private and non-profit organizations to establish additional funding sources to acquire and preserve sites or to acquire easements over sites and building facades which are worthy of preservation (City, private and non-profit organizations).

CHAPTER V: PUBLIC HEALTH AND SAFETY

A. INTRODUCTION

The City has a responsibility to plan for a safe environment in which the public is reasonably protected from risks to life, health and property. The Public Health and Safety component of the General Plan contains provisions that seek to minimize the risks from natural and man-made hazards. It is designed to identify areas where private and public decisions on land use need to be sensitive to hazardous conditions caused by seismic activity, flood, fire, and noise. It also considers man-made threats to the community's well-being, such as criminal activities and the many problems associated with hazardous materials. It further serves to inform individuals, firms, and public agencies of the City's policies on the compatibility of certain land uses and activities with the hazards that are present on a site, as well as the City's plans to respond to an emergency.

State planning law requires cities and counties to identify hazardous conditions and to prepare and implement policies to assure public health and safety. The legislative basis of these requirements is contained in the following sections of the Government Code:

- Section 65302(a) which requires preparation of a land use element to include identification of areas which are subject to flooding.
- Section 65302(d) which requires preparation of a conservation element to establish guidelines for conservation, development, and utilization of natural resources, and may cover flood control and prevention of water pollution.
- Section 65302(e) which requires preparation of an open space element to include special management or regulation of areas that may endanger public health and safety.
- Section 65302(f) which requires preparation of a noise element that quantifies the community noise environment and serves to guide development to achieve noise-compatible land uses.
- Section 65302(g) which requires preparation of a safety element to include an identification and appraisal of seismic and other geologic hazards, flooding and fires, and emergency response.

The policies which are presented in each of the elements of this component are formulated to prepare for, prevent and respond to potential hazards. However, it is unrealistic to think in terms of a completely hazard-free environment, as natural and man-made hazards are always present. Consequently, the policies contained herein implicitly consider the costs versus the benefits of hazard prevention.

The elements of this component overlap with those of some other groups. Safety issues were considered in the designation of land uses. Community design and the provision of public services has some bearing on the hazards related to fire and crime prevention. Many environmental hazards, such as water quality and flooding hazards,

are closely related to environmental resources. Hazardous materials can directly and indirectly affect such environmental resources as air, water and wildlife. Lastly, the design of a community and the efficiency of its circulation system are intimately linked to the ability of the community to respond to an emergency. The following elements are included in this component:

- Geotechnical Hazards;
- Flood Hazards;
- Noise;
- Hazardous Materials
- Fire and Crime; and
- Emergency Preparedness

B. GEOTECHNICAL HAZARDS

Introduction

Earthquake hazards present a considerable threat to safety in Emeryville. The City lies between three major faults: the San Andreas fault to the west, and the Hayward and Calaveras faults to the east. The epicenters of most significant earthquakes are located on or near faults. Many earthquakes have been felt in the Emeryville area, although most of these have been relatively minor. Because the potential damage that could be caused by significant geotechnical activity could be great, State planning law requires local communities to address these issues and plan for them through land use and building code strategies.

The earth's crust is constantly shifting. Earthquakes resulting from this activity are the result of the collision of separate blocks or "plates" of the earth's crust along faults. Major earthquakes result when these collisions occur at shallow depths; less intense surface movements occur when the collisions occur at greater depths or involve smaller blocks or shorter faults.

The results of an earthquake can include ground shaking, ground failure, and flooding from dam failures or seismically induced waves in large bodies of water. The threat that these phenomena represent to the health and safety of the community are related to the geologic composition of the soils, the designated land uses and activities, the number of people who could be affected, the ability of structures to withstand seismic shaking, and the ability of the community to respond to an emergency. Ground shaking and ground failure are discussed in this element; water inundation is discussed in the Flood Hazards Element. Community response is covered in the Emergency Preparedness Element.

Geologic History¹

The oldest predominant rock group in the Bay Area was deposited from late Jurassic to mid-Cretaceous time, 100 to 140 million years ago. These rocks, known as the Franciscan Formation, comprise the bedrock underlying the waters of the bay. Extensive folding and faulting of the earth's crust formed the predominant mountain range in the region, the Coastal Range. These movements later formed the trough that is now San Francisco Bay. This occurred about 3 million years ago. The trough was filled with sediments during Pleistocene time (about 1 million years ago) from erosion of the surrounding hills and some marine deposits.

Soils. The bedrock of the San Francisco Bay Area was deposited from 100-140 million years ago. Over time, sediments were deposited on the bedrock. These sediments comprise the alluvium over which most of Emeryville lies. Rising sea levels, caused by meltwater from glaciers in other parts of the world, flooded the trough to form the San Francisco Bay. Emeryville is situated at the eastern edge of the Bay. The western portion of the City is situated on what was formerly Bay marshland. Groundwater can generally be found within 10 feet of the surface, and in some areas within 4 feet of the surface.

Bay Mud and Landfill. Layers of clayey gravel, silt, clay, and gravel of the Temescal Formation, Merritt Sand, and San Antonio Formation overlie the Alameda Formation on the plain between the Berkeley Hills and the Bay, and underlie parts of the Bay ("older bay mud"). Fine sand, silty clay, and mud of more recent age ("younger bay mud" deposited during the melting of the Wisconsin continental glaciers) overlie the first bay mud deposits and often comprise foundations for artificial fill along the perimeter of the Bay. The younger bay mud, generally 15-30 feet thick but reaching thicknesses up to 130 feet, was deposited within the last 9,000 years.

Bay mud underlies approximately one-third of the City, or most of the area west of the railroad tracks. This area has been artificially filled, beginning about 1900 and continuing through the mid-1970s when the fingertip of the Peninsula was added to Emeryville. The fill is mostly clay and/or sandy soil interspersed with construction and industrial waste materials.²

Surficial Soils. The remainder of the surficial soils in the City are predominantly fine-grained alluvium, which is plastic, moderately to poorly sorted carbonaceous silt and clay, less than 15 feet thick, and deposited in the late Holocene period (within the last 5,000 years). This overlies Late Pleistocene alluvium deposits, which are 10,000-30,000 years old. The Pleistocene deposits exist surficially to the east of the City. Ground water generally can be found within 10 feet of the surface and in some areas within 4 feet of the surface.

Table V-1 summarizes some of the properties and behavioral characteristics of the City's surficial soils.

¹ This discussion is largely abstracted from Harold B. Goldman, "Geology of San Francisco Bay," in *Geologic and Engineering Aspects of San Francisco Bay Fill*, California Division of Mines and Geology Special Report 97, 1969.

² City of Emeryville, *Final Environmental Impact Report on the Amended Redevelopment Plan*, August 1983, p. 125.

TABLE V-1: PROPERTIES OF EMERYVILLE'S SURFICIAL SOILS

	<u>Dry Density¹</u>	<u>Permeability & Drainage²</u>	<u>Seismic Wave Amplification³</u>	<u>Suitability of Urban Development⁴</u>
Qhbm- Bay mud	Low	Low	High	Low
Qhaf - Fine-grained alluvium	Moderate	Low	Low	Moderate
Qham - Medium-grained alluvium	Moderate	Low-Moderate	Low	Moderate
Qpa - Pleistocene alluvium	Moderate	Low Moderate	Low	High

Source: E. J. Helley et al., Flatland Deposits of San Francisco Bay Region, California, Geological Survey Professional Paper 943, 1979.

¹The mass of earth materials relative to an equal volume of water. Higher densities are generally better foundation materials.

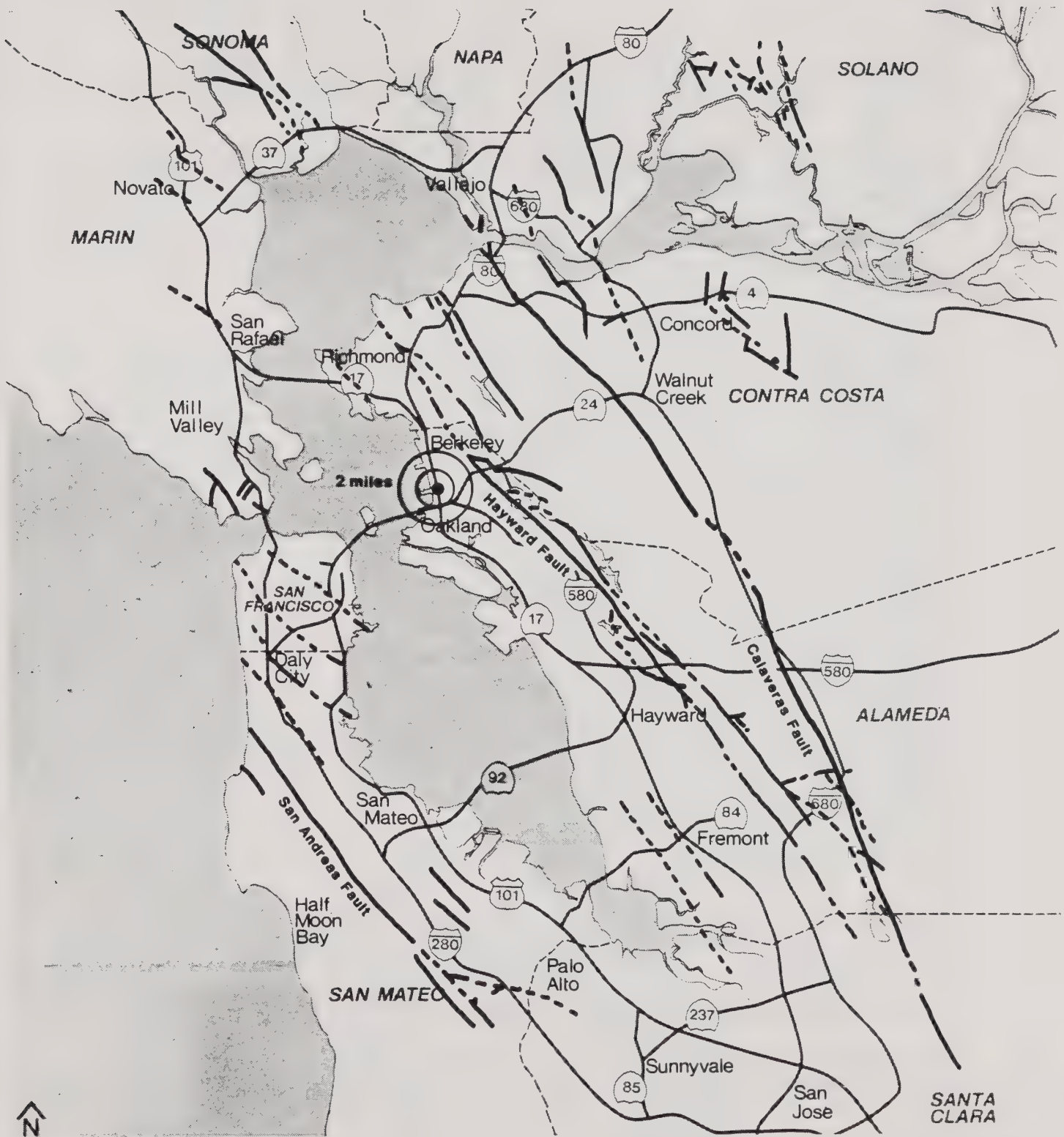
²Permeability is the capacity to transmit a fluid. Low permeability may be associated with poor drainage and problems of standing water especially during the rainy season.

³Seismic wave amplification is the property to intensify the ground response to an earthquake. High amplification would suggest greater hazards from earthquakes.

⁴Suitability considers shrink-swell potential, settlement, flooding, permeability, liquefaction, and seismic wave amplification.

Potential Hazards

Active Faults. Figure V-1 illustrates the faults in the Bay Area. The San Andreas fault, approximately 16 miles west of the City, is the most active fault in the region. Its two major branches on the east side of the Bay, the Hayward and Calaveras faults, are located approximately 4 miles and 13 miles east of the City, respectively. The largest earthquake that is likely to occur on a given fault, called the maximum credible earthquake, is estimated at magnitude 7.3 on the Richter scale



**Figure V-1
REGIONAL FAULT TRACES**

SOURCE: BCDC, The Bay Plan, September 1983; SCA; ABAG, Earthquake Hazard Mapping Program, March 1980; Goldman, Geologic and Engineering Aspects of San Francisco Bay Fill, 1969.

— FAULT
--- INFERRED FAULT

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Urban and Environmental Planners and Designers

for the Hayward and Calaveras faults, and at magnitude 8.4 for the San Andreas fault.¹

Ground Shaking. Ground shaking is the most noticeable phenomenon associated with seismic activity. Damage to buildings is the immediate and recognizable result of considerable ground shaking. The theoretical maximum ground shaking intensity for a given area is a measure of the potential ground movement and is a function of the maximum credible earthquake for a given fault, the geologic properties of the area, and distance to the fault. The amount of damage sustained depends upon the intensity of the earthquake and the type of building construction.

Maximum ground shaking intensity for Emeryville would be associated with the Hayward fault, which is closer to the City than the San Andreas or Calaveras faults. It is expected to be high due to the relatively unstable soils and closeness to the fault. As shown in Figure V-2, the area west of the railroad tracks, where the land consists of artificial fill place on top of bay mud, could experience violent ground shaking, which could cause widespread cracking and collapse in brick and wood-frame buildings, cracking of streets, destruction of foundations, and breaking of utility lines. Southern Pacific Pipelines Inc. has an 8-inch pipeline that carries refined petroleum products from Richmond through Emeryville to Oakland. Intense ground shaking from an earthquake could damage the pipeline, creating potential fire and groundwater contamination hazards. Elsewhere in the City, the soils are alluvium, which is also relatively unstable, and ground shaking could be very strong, which could cause collapse of most masonry chimneys, considerable cracking of masonry buildings, some tilting and occasional collapse of wood-frame buildings, and cracking and crushing of foundation walls.²

In general, buildings constructed prior to 1965 are not reinforced. Most brick buildings and those with windows continuous to the corners of the structure can be considered unreinforced structures. Concrete tilt-ups and other structures erected after seismic safety requirements were added to the Uniform Building Code in 1965 are not generally thought to present earthquake hazards to building occupants,³ although the results of the 1985 Mexico City earthquake suggest a need to re-evaluate the Building Code.

Ground Failure. Ground failure is the inability of the ground to maintain its strength during earthquake shaking. The phenomena includes such failures as surface rupture, landslides, liquefaction, lateral spreading, subsidence, and settlement. All of these involve displacement of the ground surface due to loss of strength or failure of the underlying materials during earthquake shaking.

No known faults lie within the City. Consequently, neither horizontal rupture nor vertical faulting should pose a danger. However, a presently unidentified fault,

¹Association of Bay Area Governments, Earthquake Hazard Mapping Project, Working Paper #17, December 1983, p. 5.

²Ibid.

³Bill Burke, Building Inspector, City of Emeryville, November 11, 1984.

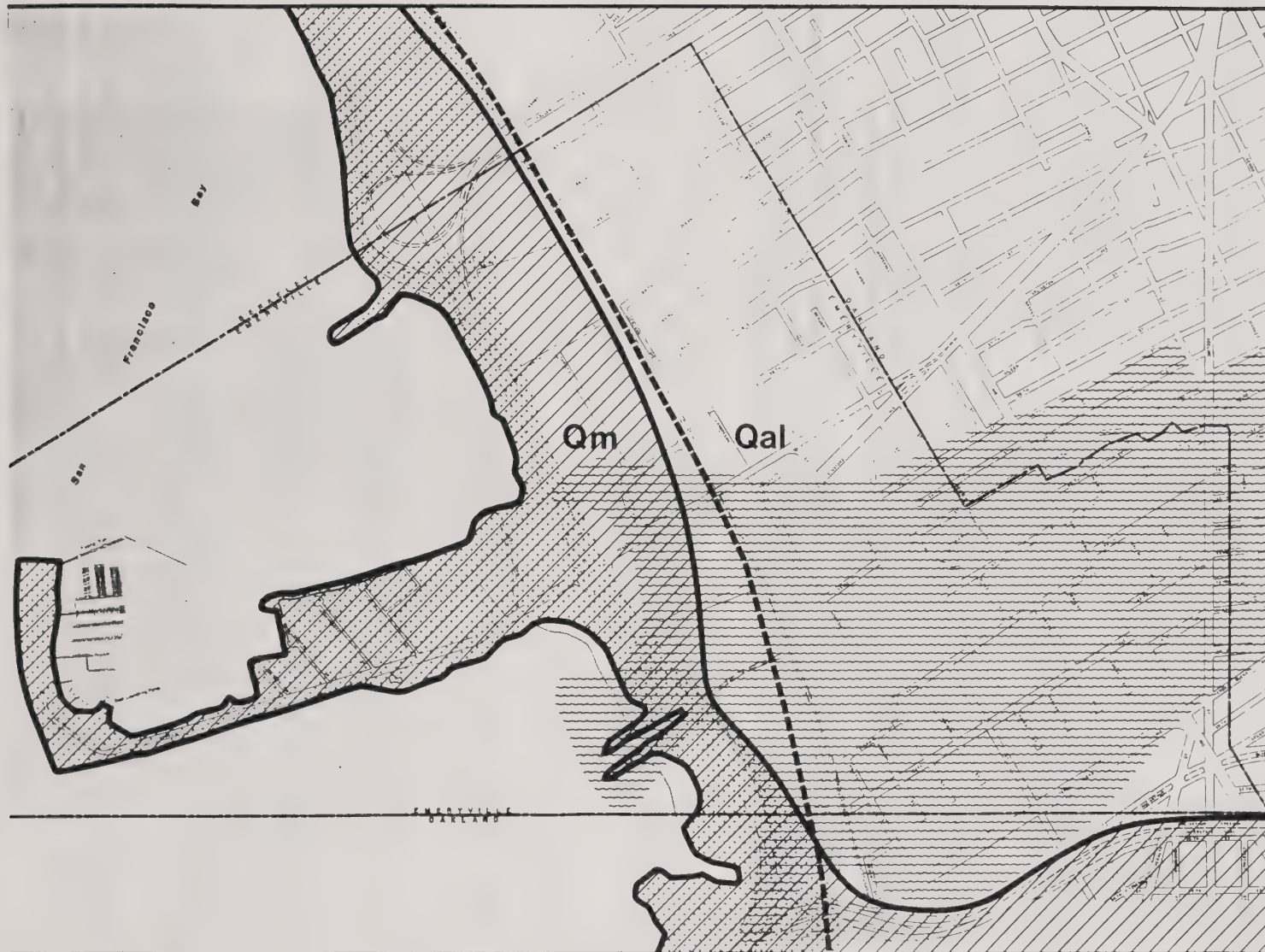
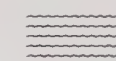
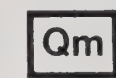
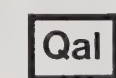


FIGURE V-2
GEOLOGICAL
CHARACTERISTICS

-  AREA SUBJECT TO VIOLENT GROUND SHAKING DURING MAJOR EARTHQUAKE (All other areas in Emeryville subject to very strong ground shaking)
-  APPROXIMATE EXTENT OF WATER INUNDATION FOLLOWING DAM FAILURE AT LAKE TEMESCAL
-  APPROXIMATE AREA OF TSUNAMI INUNDATION (20-foot runup at Golden Gate Bridge)

SOILS AND LIQUEFACTION:

-  **Qm** Holocene estuarine mud: Unconsolidated water-saturated mud and artificial fill overlying bay mud. 0-40m thick, overlies Quaternary alluvium. (Liquefaction potential in this area is .276 + % (low).)
-  **Qal** Quaternary alluvium: Unconsolidated to weakly consolidated silt, sand, and gravel. 0-50m thick, generally overlies bedrock. (Liquefaction potential in this area is .010-.045% (very low).)

-  HISTORIC MARGIN OF THE BAY, 1850

Source: ABAG; Alameda County Flood Control and Water Conservation District; USGS MF-709, MF-480, Open File Reports.



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which could be the southward extension of a probable fault concealed in the Bay west of Point Richmond, may exist concealed beneath the thick alluvial sediments.¹

Liquefaction. Liquefaction is the transformation of a granular material (such as sand) from a solid to a liquid state. In a solid state, sand grains are touching each other and the weight of overlying material (such as landfill) is supported by the sand. Ground shaking from an earthquake can cause the grains of sand to be forced apart momentarily, allowing underlying water to filter up and the granular material to lose its cohesiveness. Liquefaction potential, shown in Figure V-2, is primarily a function of soil type.

In Emeryville, the geologic materials most likely to liquefy are the water-saturated bay muds and their overlying fill.² If only the bay mud liquefies, buildings placed on top of the fill may experience differential settlement. If, in addition, the landfill liquefies, sand may flow from under buildings, causing them to collapse. Liquefaction potential is a function of earthquake magnitude, recurrence intervals, distance to active faults, and the likelihood of a soil type to be found in a liquid state. The likelihood of this occurrence is extremely low (less than 3%) due to the relative infrequency of earthquakes of sufficient magnitude to cause liquefaction.³

A study performed by Woodward-Clyde Consultants prior to construction of Pacific Park Plaza⁴ indicated that complete loss of soil strength in the artificial fill would not be likely except in some locally loose pockets of sand. The study also found that sands below the groundwater level could experience some failure during moderate to strong shaking, which could cause settling of pile foundations.

Slope Stability. The terrain within the City is flat, with slopes of less than 5%. Slope stability therefore does not represent a hazard, although the Bayfront area could be considered unstable because it is underlain by moist, unconsolidated bay

¹Blake, et al; 1974, cited in City of Emeryville General Plan Volume II, August 1975, p. 13.

²Mary Dresser, "Land Stability Along the East Bay Shoreline," in The East Bay Shoreline: Selected Environmental Issues, June 1982, p. 30; E. J. Helley, et al., Flatland Deposits of the San Francisco Bay Region, California: Their Geology and Engineering Properties, and Their Importance to Comprehensive Planning, Geological Survey Professional Paper 943, 1979, pp. 53, 55-56.

³Association of Bay Area Governments, Earthquake Hazards Mapping Project, Working Paper #4; Jeanne Perkins, Senior Regional Planner/Earthquake Program Manager, Association of Bay Area Governments, Oakland, California, November 13 and 20, 1984.

⁴Woodward-Clyde Consultants, Geotechnical Engineering Study, Final Design Report, East Bay Park Condominiums, Emeryville, California, June 1981.

mud that is subject to flowage. Lands east of the Bayfront area are considered stable since they are level and not underlain by landslide deposits.¹

Subsidence and Settlement. Subsidence is the gradual settling or sinking of an area with little or no horizontal motion. In the Bay Area, it is caused primarily by excessive groundwater or natural gas withdrawal.² The rate of subsidence is not significant in Emeryville and is of little concern in the Bay Area, except in the South Bay and the Delta.

Settlement is the gradual downward movement of an engineered structure (e.g., a building) due to the compaction of the unconsolidated material below the foundation. Three types of settlement can occur:

- pile settlement due to building loads;
- consolidation settlement in the layer of young bay mud; and
- seismically induced compaction settlement in artificial fill.

Artificial fill will settle over time, regardless of the quality and degree of compaction of the material. The amount of settlement depends on the compressibility of the mud, its depth, and the depth and density of the fill.³

Settlement can occur either uniformly or differentially. Uniform settlement in a building can create problems of poor drainage and potential failure of underground utility connections. Differential settlement can cause mechanical problems within a structure, although these can be minimized if the structural engineers are aware of the site conditions. For example, land which is subject to settlement can be surcharged before building or road construction; that is, a calculated load of temporary dirt fill can be placed on the soil for a predetermined period of time. This has the effect of forcing consolidation of the underlying soils.

Gradual long-term settlement can occur from consolidation of the bay mud by the weight of fill. Except for the tip of the Peninsula, which is used as a park, all fill in Emeryville has been in place for over 20 years. Most long-term settlement is therefore virtually complete. If, however, grades are raised by more than one foot due to

¹Tor H. Nilson, et al., Relative Slope Stability and Land Use Planning in the San Francisco Bay Region, California, Geological Survey Professional Paper 944, 1979.

²E. J. Helley, et al., Flatland Deposits of the San Francisco Bay Region, California: Their Geology and Engineering Properties, and Their Importance to Comprehensive Planning, Geological Survey Professional Paper 943, 1979, p. 45.

³Mary Dresser, "Land Stability Along the East Bay Shoreline," in The East Bay Shoreline: Selected Environmental Issues, June 1982, p. 34.

placement of new fills, additional consolidation settlement can be expected.¹ Moreover, earthquake shaking can produce settlement in addition to that caused by consolidation. A study by Woodward-Clyde Consultants indicates that settlement of 1.0 to 1.5 inches could be expected in the location of Pacific Park Plaza.²

Potential Effects of Seismic Activity

It is impossible, at the present time, to prevent, control, or accurately predict earthquakes. Since severe earthquakes will continue to occur, structures must be designed to withstand significant shaking without serious failure and the resultant injuries and loss of life. A severe earthquake may not result in disaster if buildings and cities are properly designed and a response network is adequately prepared.

There are several issues which must be studied to estimate the possible damage resulting from an earthquake. With this information, plans can be formulated to respond to that potential. Several variables must be considered: (1) the maximum likely ground shaking intensity (which would result from a maximum credible 7.3-magnitude earthquake on the Hayward fault, as previously discussed); (2) the structures which are likely to be occupied; (3) emergency response; and (4) effects on "lifelines" and the degree to which the City depends on them.

The San Fernando earthquake of 1971, which measured 6.3 on the Richter scale, provided an important opportunity to assess the damage to a modern urban environment from a major earthquake. An earthquake of this size is often thought of as a "moderate" earthquake; however, conditions such as surface faulting and hazardous soils conditions in this densely populated area intensified the damage. This earthquake resulted in 65 deaths and over \$500 million in property damage.³

The damage to one- and two-story wood-frame houses just a few blocks from the area of surface faulting was not great. Partial collapse occurred in split-level houses with large garages under the two-story sections. Unreinforced masonry buildings were severely damaged. Broken utilities did not represent a significant hazard, but freeway overpasses and road surfaces experienced major damage.⁴

The Mexico City earthquake of September 1985 (8.1 on the Richter scale) will also provide some valuable information on earthquake preparation and response. It is currently estimated that as many as 23,000 people lost their lives in this earthquake; another 30,000 were injured, and 300,000 were left homeless. Over 7,000 structures

¹Derived from Woodward-Clyde Consultants, Geotechnical Engineering Study, Final Design Report, East Bay Park Condominiums, Emeryville, California, June 1981, p. 13.

²Woodward-Clyde Consultants, Geotechnical Engineering Study, Final Design Report, East Bay Park Condominiums, Emeryville, California, June 1981.

³B. A. Bolt, et al., *Geological Hazards: Earthquakes-Tsunamis-Volcanoes-Avalanches-Landslides-Floods*, New York: Springer-Verlag, 1977 revised, 2nd edition, p. 39.

⁴Ibid, pp. 41-42.

were damaged; 265 collapsed, and nearly 1,000 will have to be demolished as a result of severe damage. Estimates of the cost of damage range from \$4 to \$10 billion.¹

Although the soil conditions in Mexico City are different than those in Emeryville (Mexico City lies on an ancient lakebed of soft sedimentary clay soils), the amount of shaking that was experienced could be expected in the Bay Area. In addition, although less than 1% of all buildings suffered any damage, many of the buildings which were damaged were built to modern seismic code requirements. In fact, due to the unusual characteristics of the ground motion, the buildings that suffered major damage were primarily mid-rise reinforced concrete structures. Many reinforced masonry buildings also were damaged. It has been determined that the ground motion period corresponded with the natural frequency of buildings in the height range of eight to fourteen stories, accounting in part for the large number of such buildings that collapsed.² Furthermore, the long duration of the earthquake (80 to 110 seconds)³ exacerbated the damage. Surprisingly, many masonry buildings did not suffer major damage, not due to their strength but primarily because the ground motion did not correspond with the natural frequency of those buildings. Preliminary reconnaissance of the damage in Mexico City indicated that structural damage commonly occurred under the following conditions:⁴

- building elements, such as roofs and foundations, which were not adequately joined;
- older buildings which could have suffered undetected damage from previous strong earthquakes;
- non-symmetrical building configurations and stiffness;
- inadequate separation between buildings, allowing tall, flexible buildings to strike lower, stiffer buildings;
- inadequate design, construction, and maintenance of structures;
- older, inflexible reinforced concrete buildings; and
- steel-frame structures of a height (8-14 stories) which corresponded to the frequency of the ground motion.

¹Bay Area Regional Earthquake Preparedness Project, Networks Earthquake Preparedness News, The Mexico City Earthquake of September 19, 1985: Lessons for the Bay Area, February 1986.

²Harry Seidler, "Mexico City Earthquake," The Times Council on Tall Buildings and Urban Habitat, vol. 15, no. 2, November 1985.

³Ibid.

⁴Bay Area Regional Earthquake Preparedness Project, Networks Earthquake Preparedness News, The Mexico City Earthquake of September 19, 1985: Lessons for the Bay Area, February 1986.

Definitive determinations of the causes of building damage or collapse, and the responses of individual buildings, await further detailed study and documentation.

Most residences in the eastern portion of Emeryville are one- and two-story wood-frame structures, and are not likely to suffer great damage other than collapse of chimneys during a major earthquake. West of the main railroad line in the Bayfront and Peninsula, the high-rise Pacific Park Plaza and the 3-story Watergate complex contain the only residences. Both complexes could experience violent shaking, as previously mentioned, due to the relatively unstable soils underlying them. The 30-story condominium tower is built on pile foundations and theoretically should not suffer major damage, although utility lines could rupture.

Unreinforced masonry industrial and commercial buildings exist in many parts of the City. These structures could collapse in the western portions of the City, and could experience significant damage or collapse in areas where shaking would be slightly less severe. New structures are subject to building codes which include seismic safety measures. Small steel-frame buildings generally are the safest non-residential structures, and concrete tilt-ups pose a slightly greater risk. Residential and non-residential buildings with large amounts of glass or homes which are not adequately tied to their foundations could experience severe damage. In addition, windows and non-structural parts of buildings such as glass and unreinforced chimneys or ornamental features may fall from buildings and injure pedestrians. Generally, a building can be considered hazardous in the event of an earthquake if it possesses any of the following characteristics:¹

- Construction prior to adoption and enforcement of building codes requiring seismic safety measures;
- Construction of unreinforced masonry;
- Construction which cannot resist lateral forces;
- Exterior parapets and ornamentation that may fall on pedestrians; and
- Large openings in walls that may not be able to resist torsional forces.

Additional information on the hazards presented by certain building types and configurations may become available as a result of the Mexico City earthquake.

The time of the earthquake occurrence and the efficiency of Emeryville's and the region's emergency response system will have a great effect on the amount of damage the City and its residents could suffer (see Emergency Preparedness Element). An earthquake that occurs in the middle of the day or during the commute period could cause the most damage because of widespread confusion and attempts by individuals to contact family members, thus clogging communication lines and roadways. Damage to lifelines, such as freeways and local roads, water and power distribution systems, wastewater treatment systems, conveyance systems and communication lines can be expected. This damage could last from 36 to 72 hours or

¹ Hazardous Buildings Committee, California Seismic Safety Commission, Hazardous Buildings: Local Programs to Improve Life Safety, SSC 79-03, March 8, 1979, p. 21.

more;¹ therefore, it is essential for each household to set aside emergency supplies of food and water for at least a 3-day period.

The Mexico City earthquake occurred just after 7:00 a.m. Primarily due to extensive use of bottled gas, the fires which followed were fairly localized. This would probably not be the case in Emeryville. Power generation and distribution facilities were not badly damaged, but water supply was cut off due to a damaged distribution pipelines. Telephone service was cut off following equipment damage and loss of personnel when a telephone company building partially collapsed.

It is not possible to completely avoid damage from a major earthquake. The buildings which must be able to withstand major damage and recover quickly are those housing essential services. These are called "critical structures" and they include police and fire stations and emergency health care facilities. Damage can be minimized if these facilities remain functional following a major disaster.

Objectives

- A. Reduce potential injury and loss of life resulting from seismic activity.
- B. Minimize property damage resulting from seismic activity.

Policies

- 1. All critical structures (police and fire stations and emergency medical facilities) shall be designed or improved to remain functional following the maximum credible earthquake. Critical facilities and buildings which contain important public records should not be located in areas of potential violent ground shaking.
- 2. All existing and proposed major utility lines, including gas lines, power transmission lines, and sewer lines, shall be placed underground, and gas and sewer lines shall be designed to minimize danger to the surrounding development and should facilitate efficient repair should the lines fail. The gas pipeline running through the City should be retrofitted if necessary to assure that its shutoff system will function properly if the pipeline should rupture. The City should develop a schedule for placing existing lines underground.
- 3. New buildings shall be constructed to withstand ground shaking to the highest degree that is technologically and economically feasible to minimize risks to building occupants.
- 4. Existing hazardous buildings such as unreinforced masonry structures should be made safe for building occupants; or else the building occupancy should be evaluated and altered, if necessary, to minimize the number of people who could be at risk.

¹ California Division of Mines and Geology, Earthquake Planning Scenario for a Magnitude 8.3 Earthquake on the San Andreas Fault in the San Francisco Bay Area, Special Publication 61, 1982.

5. Following an earthquake, the City should begin reconstruction and rehabilitation as soon as is feasible, following priorities set by the state and county Offices of Emergency Services.
6. Individual preparation for earthquake response should be encouraged.

Implementation

1. Evaluate and, where necessary, upgrade the lifeline services for seismic safety, including police and fire facilities, water and power distribution, communications, roadways, and sewage disposal (City, EBMUD, PG&E, Pacific Bell, Caltrans).
2. Require property owners/developers to underground utilities for new projects including those within City rights-of-way unless the existing utility infrastructure adjacent to their site is shared by other properties (City). In this case, there shall be an agreement that the property owner is committed to participate in an assessment district set up for the purpose of undergrounding utility infrastructure located within the City's rights-of-way at a future date. The City has been requiring the undergrounding of utilities as stated, as an environmental mitigation measure on new and rehabilitated projects. The reason that all above-ground power poles, transformers and utility lines be undergrounded is to these potential hazards to people during an earthquake.
3. Require soils studies prior to approving any new buildings or new uses of existing buildings to assure compliance to the seismic safety requirements of the Uniform Building Code (City).
4. Review and amend, if necessary, City codes and ordinances to recognize the hazards posed by some existing structures (City). Retain a structural engineer to inspect and evaluate all high-occupancy buildings and seismically hazardous buildings, particularly those constructed of unreinforced masonry. Adopt measures to ensure that building occupants are not exposed to unnecessary risk in any of these structures. This should be completed within five years.
5. Ensure compliance with the Building Code during design construction stages and following building occupancy (City).
6. Review current publications and incorporate new information gained from recent earthquakes into updates of the building code (City, State and regional agencies).
7. Consider requiring communication of known seismic risks due to structural deficiencies or specific soils conditions during the transfer of property ownership (City).
8. Promote educational programs through schools and coordinate earthquake awareness and preparedness programs with regional agencies (City, school district, regional agencies).

C. FLOOD HAZARDS

Introduction

Consideration of water-related hazards is required by several sections of State planning law. Specifically, plans for flood control and appraisals of potential tsunami inundation must be addressed under the provisions for a conservation element (Government Code Section 65302(d)) and a safety element (Government Code Section 65302(g)).

Flooding may occur in Emeryville as a result of: storm-induced flooding, tsunamis, and inundation from dam failure. The actual potential for flood damage, however, is minimal, as described below.

Storm-Induced Flooding. Temescal Creek, which flows through the City from Lake Temescal in the East Bay hills to the Bay, is the major surface drainage-way in Emeryville. Prior to 1963, periodic flooding and erosion occurred along the creek, culminating with the floods of October 1962, which resulted in extensive property damage. The floodplain of Temescal Creek was then incorporated into Alameda County Flood Zone 12, and the 100-year flood level was contained by constructing a deeper, wider concrete channel.¹

Emeryville participates in the National Flood Insurance Administration program, which provides federally subsidized insurance and loans to property owners against losses due to flooding. As a condition for receiving this insurance, communities must develop Flood Insurance Rate maps showing flood risk zones, and develop and implement flood plain regulations.² In 1976, the Emeryville maps were rescinded because studies indicated that the City does not face a significant flood hazard. Emeryville has participated in the program without maps since that time. Subsidized flood insurance is optionally available; it could become mandatory if future studies indicate a high flood hazard potential in the City.³

Tsunamis. Tsunamis, often incorrectly referred to as tidal waves, are caused by submarine seismic or volcanic disturbances. The waves increase in size with the distance traveled. The U.S. Geological Survey estimates that a 20-foot wave at the Golden Gate Bridge (an event that is estimated to be possible once every 200 years) could potentially cause runup of a 10-foot wave in the Emeryville Peninsula and

¹City of Emeryville, Final Environmental Impact Report on the Amended Redevelopment Plan, August 1983, p. 128.

²Bill Brick, Chief of Water Resources Branch, Army Corps of Engineers, November 29, 1984.

³Ray Lenaburg, Civil Engineer, Federal Emergency Management Agency, November 29, 1984.

shoreline area¹ (see Figure V-3). It should be emphasized that the occurrence of a 20-foot wave, although possible, is highly unlikely; during the period 1868-1968, 19 tsunamis were recorded at the Golden Gate tide gauge and the maximum height was 7.4 feet.²

Dam Failure. Following significant seismic activity, the dam at Lake Temescal could fail, causing Temescal Creek to overflow its banks. Within 15 minutes, an area nearly 1,000 feet on either side of the creek in the Triangle area would be inundated, and within 25 minutes, the water could reach the rest of the City west toward the Bay and north approximately to Powell Street.³ This is illustrated in Figure V-3. The likelihood of this flood hazard is dependent upon the occurrence of a major earthquake and the ability of the dam to withstand seismic activity. An engineering analysis would be required to assess the strength of seismic shaking that would likely impact the dam.

Objectives

- A. Protect human life and property from hazards associated with flooding.
- B. Enhance the visual appearance of the City's waterway; minimize flood dangers.

Policies

1. The present stormwater holding capacity of the Temescal Creek drainage shall be maintained or enhanced upon creek alteration. The elements of the community development components propose the integration of Temescal Creek into the park system, calling for a transformation of the creek from its present status of a utilitarian drainage-way. This transformation could involve re-grading banks, removing sections of concrete lining, opening up some parts of the creek which now run underground, and the creation of ponds or other water features. Such changes should be analyzed comprehensively to determine how they might impact the ability of the drainage system to contain flood waters.
2. Flooding and erosion control in the Temescal Creek drainage should be achieved through techniques which are consistent with natural processes wherever possible.
3. Improvements to Temescal Creek should be designed to increase the holding capacity of the channel, if necessary, in anticipation of dam failure. The extent of the increase in holding capacity should be determined by the likelihood of failure and the extent of damage which could follow.

¹J. R. Ritter and W. R. Dupre, Map Showing Areas of Potential Inundation by Tsunamis in the San Francisco Bay Region, California, U.S. Geological Survey Miscellaneous Field Studies Map MF-480, 1973.

²Ibid.

³Rubin Nino, Alameda County Flood Control and Water Conservation District, November 16, 1984.

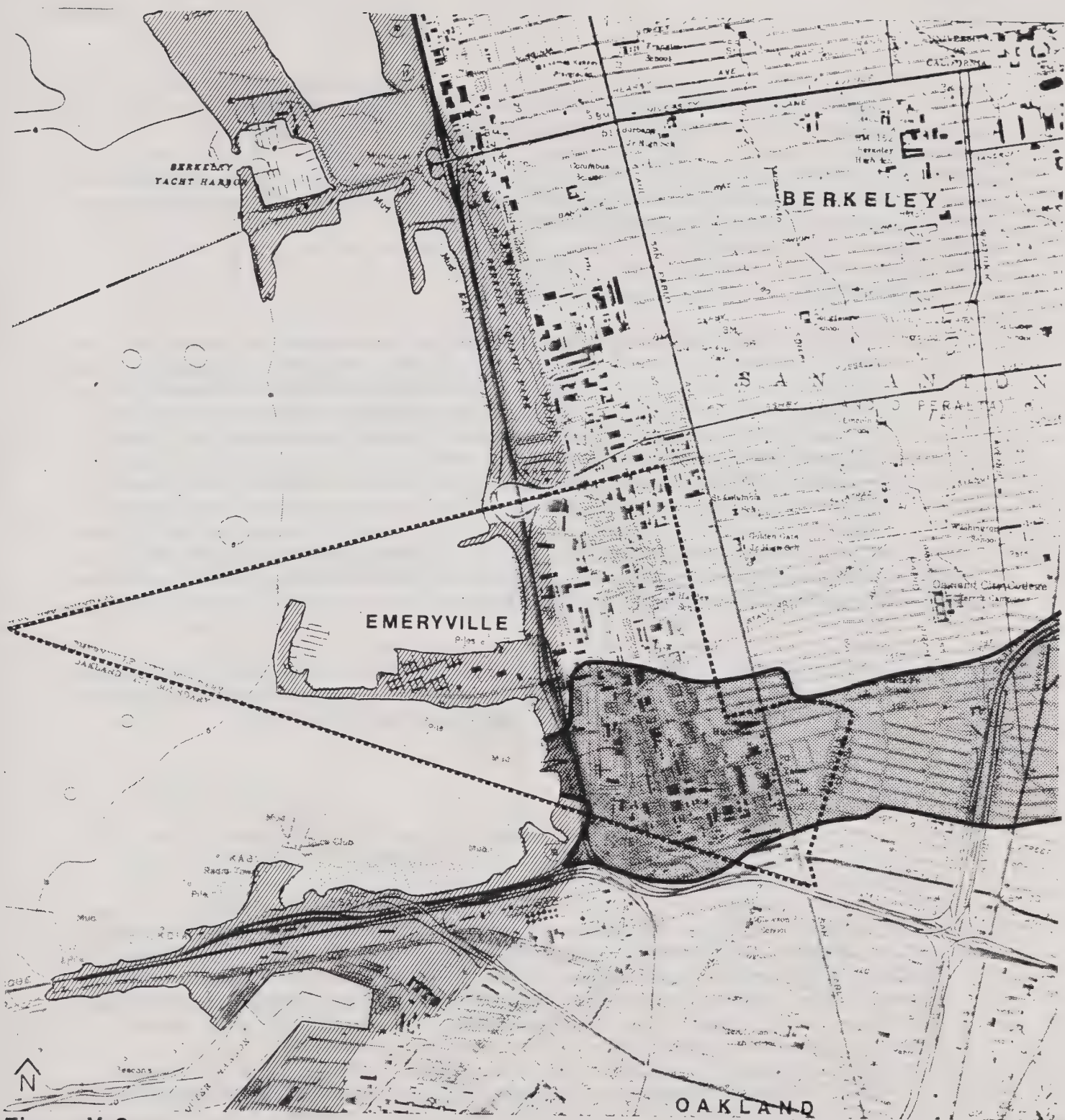


Figure V-3
FLOOD HAZARDS

SOURCE: Ritter and Dupre, Maps Showing Areas of Potential Inundation by Tsunamis, 1972; Alameda County Flood Control and Water Conservation District, 1973.

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SEDWAY COOKE ASSOCIATES

Urban and Environmental Planners and Designers

scale in feet

0 200 400 600 800 1000 2000 3000 4000

4. Residents and homeowners in the area of potential flooding should be informed of the potential risk and the appropriate preparation and response.
5. Open space land uses and the construction of water retaining structures should be encouraged in the vicinity of Temescal Creek to enhance the visual appearance of the creek and reduce flood risks.

Implementation

1. Conduct an engineering analysis to determine the extent of necessary flood and erosion control measures as plans are made to rehabilitate Temescal Creek (City, Alameda County Flood Control and Water Conservation District). Engineering techniques for erosion control which mimic the natural environment, such as wattling (vegetative erosion control), bank terracing, check dams, or temporary retention areas, if properly designed, have the effect of stabilizing the stream course, and possibly increasing its stormwater holding capacity, while retaining the character of a natural waterway. Conventional channel improvements, on the other hand, by straightening the course and not allowing surface percolation, have the effect of intensifying the stormwater flows and therefore destabilizing the drainage system. For this reason, such improvements are usually "over-designed," huge concrete ditches which tend to convey an image of urban blight.
2. Determine with more precision the likelihood and possible extent of damage which would result from the failure of the Lake Temescal dam (City, Alameda County Flood Control and Water Conservation District).

D. NOISE

Introduction

Noise is unwanted sound. People can tolerate or ignore most noise, but beyond certain limits it can be both annoying and physically harmful. The Noise Element of the General Plan seeks to protect the citizens of Emeryville from excessive noise exposure. It describes the community noise environment and provides a basis for comprehensive local programs to control and abate environmental noise where it is deemed harmful to public health.

The Noise Element is most closely related to the Land Use, Housing, Circulation and Pacific Facilities Elements. As required in Section 65302(f) of the Government Code, the Noise Element is to be used as a guideline in the development of compatible land uses. The Housing Element concerns the provision of a decent living environment for Emeryville residents, which should include protection from excessive noise. Noise can influence the location and cost of housing.

Since vehicles are major noise sources, the Circulation Element is a primary determinant of noise compatibility. The Public Facilities Element influences and is influenced by the Noise Element: excessive noise can adversely affect the enjoyment of outdoor open space and recreation activities. Conversely, open space can serve as a buffer between noise sources and sensitive receptors.

Effects of Noise on People

Noise is a pollutant which adversely affects all people in an urbanized environment at some point in time. The degree to which its effects are serious depends on the tolerance of the individuals in the community, the types of activities taking place, and the characteristics of the noise. Noise can disrupt activities that involve speech or listening, and it can cause distraction, stress and irritation. In many situations, the effects are subjective and noise may not be identified as the problem if the individual is not conscious of it. Prolonged exposure to intense noise can result in physiological effects such as temporary or permanent hearing loss.¹

The task of creating an acceptable noise environment is difficult because it affects each person differently. An important parameter in determining a person's subjective reaction to noise is the environment to which he or she is adapted. "Ambient" noise is a composite of all noise sources, near and far, which constitute the normal or existing level of environmental noise at a given location. In general, the more a noise exceeds the ambient noise, the more intrusive and less acceptable the noise is to the community. The relative intrusiveness of noise also depends on the level of the sound, its tonal quality, duration, frequency and time of occurrence.²

Noise becomes more intrusive if it occurs intermittently or if the sound levels undulate. Noise which is constant is usually less irritating; people become less aware of it over time. Noise which occurs during periods of quiet, such as in the evening when most people are resting or engaged in talking, resting, listening to the radio or watching television, is more intrusive than noise which occurs in the middle of the day. Similarly, noise which occurs in the vicinity of sensitive noise receptors--residential areas, schools, hospitals, and churches--is less tolerable than noise which occurs in a busy industrial area or adjacent to a freeway.

Measuring Noise

Sound is measured in decibels (dB), which describe relative levels of sound intensity. The decibel scale is logarithmic; 20 dB is 10 times louder than 10 dB, and 30 dB is 10 times louder than 20 dB (100 times louder than 10 dB). Because the human ear does not hear low- and high-frequency sounds (the quietest and loudest sounds, respectively) as well as those in the mid-range, a scale has been devised to describe dB sound measurements according to the response of the human ear. The scale that best approximates this response is the A-weighted scale, called the "A-scale," and measurements using this weighting system are expressed as dBA.

As shown in Table V-2, normal everyday sounds range from 30 dBA, which is very quiet, to almost 100 dBA, which is very noisy. Although noise levels above 60 dBA can disrupt some activities, most people do not become annoyed by it at this level.

¹For more information see U.S. Environmental Protection Agency, Office of Noise Abatement and Control, *Toward a National Strategy for Noise Control*, April 1977.

²California Department of Health, Office of Noise Control, *Guidelines for the Preparation and Content of Noise Elements of the General Plan*, February 1976, p. 4.

TABLE V-2: TYPICAL SOUND LEVELS FOR COMMON NOISE SOURCES

QUALITY OF SOUND	SOUND LEVEL, dBA	TYPICAL SOUNDS
UNCOMFORTABLY LOUD (THRESHOLD OF PAIN)	130	
	120	Jet takeoff at 200 feet
	110	Thunder
VERY LOUD	100	Rock band
	90	Power lawn mower
	80	Diesel bus at 15 feet
	70	Motorcycle at 25 feet
LOUD	60	Inside sports car, 55 mph
	50	Garbage disposal at 3 feet
	40	Freeway traffic at 50 feet
QUIET	30	Vacuum cleaner at 10 feet
	20	Inside department store
	10	Normal conversation
VERY QUIET	0	Quiet street
		Average residence
BARELY AUDIBLE		Quiet room
		Whisper at 5 feet
THRESHOLD OF HEARING		Leaves rustling
		Mosquito at 3 feet

Source: City of Emeryville General Plan, Vol. 2, 1975; Charles M. Salter Associates, 1985; U.S. Environmental Protection Agency, Fundamentals of Noise: Measurement, Rating Schemes, and Standards, December 1971, p. 29; SCA.

Above 70 dBA, noise becomes a significant adverse aspect of the environment; speech is disrupted and irritation is a widespread response. When noise levels reach 75 dBA and above, some hearing loss may begin to occur and noise is likely to be identified as the major source of annoyance by the community.¹

The amount of noise heard in an environment varies over time: trucks may pass by only in the morning; a steady hum may be heard from a freeway or from a creek; a dog may bark intermittently. A number of different descriptors are used to characterize noise according to these time variances and the differences in people's responses to daytime and nighttime noises.

California law requires the use of either the Ldn (day-night average level) or the CNEL (community noise equivalent level) to describe the community noise environment. Both descriptors adjust measurements upward for periods when the community would be more sensitive to noise. The Ldn descriptor separates the day into daytime and nighttime periods, adjusting measured noise upward during nighttime periods. The CNEL accounts for a daytime, evening, and nighttime period and similarly adjusts evening and night noise. These two noise descriptors are very similar, and for all practical purposes the measurements obtained from the two systems are the same. The Emeryville General Plan uses the Ldn measurement system. The national trend is toward the use of this descriptor, and it is recommended by the EPA.

Existing Noise Environment

Most of Emeryville is relatively noisy. Major noise sources fall into two categories: vehicular and non-vehicular sources. Vehicular sources include rail operations, some aircraft flybys, and motor vehicles on the freeways and local streets. Non-vehicular sources are primarily stationary, namely the industrial operations west of Hollis Street and in the vicinity of San Pablo Avenue. The eastern portion of the City is significantly quieter than the western portion, as the western portion of the City is closer to major freeway noise sources and contains more industrial land uses and more traffic. However, there are several industrial operations in the eastern portion of the City, and some truck traffic passes through the residential areas east of San Pablo Avenue. Airplane flyovers are another noise source but are not pervasive enough to alter the ambient noise environment.

The community is relatively tolerant of urban noise. Outside of occasional residential problems (such as parties or barking dogs) or isolated events, formal complaints are limited. Some residents have voiced concerns about the truck traffic and nighttime industrial operations in the predominantly residential areas east of Hollis Street.

Most noise in Emeryville originates from major vehicle circulation routes: I-80 and I-580 freeways and Powell Street, with Hollis Street and San Pablo Avenue slightly less noisy. Noise levels drop significantly as distance from roadways increases, not only because the distance dissipates noise, but also because the buildings along the roadways provide effective noise shielding for uses which are behind them.

¹ Federal Inter-agency Committee on Urban Noise, Guidelines for Considering Noise in Land Use Planning and Control, June 1980, Appendix D.

A noise monitoring program, conducted as part of the comprehensive planning effort, measured noise levels from 16 different locations in the City. The monitoring sites were selected to represent a variety of environments and exposure to the spectrum of potential noise sources--automobiles, trains, industrial operations, etc. The noise measurements taken in 1985, as shown in Figure V-4, indicate that noise levels in residential areas of Emeryville range from approximately 55-60 dBA Ldn in parts of central Emeryville equidistant from Powell Street, Hollis Street, and San Pablo Avenue; to 60-65 dBA Ldn in the Triangle near San Pablo Avenue and in the vicinity of Watergate on the Peninsula. Predominantly industrial and commercial areas of southern Emeryville near Park Avenue, Yerba Buena Avenue and Hollis Street and most of the northern area between Hollis and Bay Streets commonly experience noise levels of 65-70 dBA Ldn. Much of the Bayfront ranges from 70 to 75 dBA Ldn. Appendix G describes the observations and measurements made at each of the monitoring sites.

Table V-3 describes typical noise levels from community environments. Noise levels in Emeryville vary by location, but most of the City can be characterized as a noisy urban environment, meaning that the ambient noise levels are relatively high. The Office of Noise Control in the California Department of Health Services suggests that residents of this type of community may be more tolerant of noise than those in quieter communities, and recommends less stringent noise controls relative to the community's tolerance. Noise controls should be re-evaluated periodically, as new information becomes available.

Future Noise Environment

The policies of the Land Use, Housing, Circulation and Noise Elements will define the future noise environment. Noise sources will remain largely unchanged as a result of the new land uses, although many industrial sources will be removed, lowering noise from stationary sources. Increased traffic within the City and in nearby communities will result in increased circulation noise levels. The future noise contours shown on Figure V-4 for the Bayfront are based on projected citywide traffic levels and anticipated train operations. The Bayfront will remain the noisiest area in the City, with Ldn levels reaching 70-80 dBA.

Objectives

- A. Prevent significant increases in noise levels where noise-sensitive land uses are located.
- B. Reduce environmental noise where possible to remedy existing incompatibilities.
- C. Protect occupants of existing and new buildings from exposure to excessive noise.

TABLE V-3: RANGE OF TYPICAL OUTDOOR NOISE ENVIRONMENTS, Ldn

<u>Type of Environment</u>	<u>Day-Night Sound Level, dBA</u>	<u>Typical Locations</u>
	85	Los Angeles, 3rd floor apartment balcony next to Santa Monica freeway
	80	Los Angeles downtown with some construction activity
Downtown Major Metropolis	75	San Francisco high-density downtown residential
Very Noisy	70	San Francisco medium- to high-density residential near downtown
Noisy Urban	65	*Emeryville (approximate, varies with location)
Urban	60	Santa Clara Valley residential
Suburban	55	Berkeley Hills low-density residential
Small Town/Quiet Suburban	50	Portola Valley wooded residential
Rural	45	Salinas Valley tomato field on farm

Source: California Department of Health, Office of Noise Control, Guidelines for the Preparation and Content of Noise Elements of the General Plan, 1976; SCA.

*The California Department of Health, Office of Noise Control, suggests that noisy urban communities are more tolerant of noise than quieter communities, and recommends that measured noise levels be adjusted downward to correct for this tolerance.

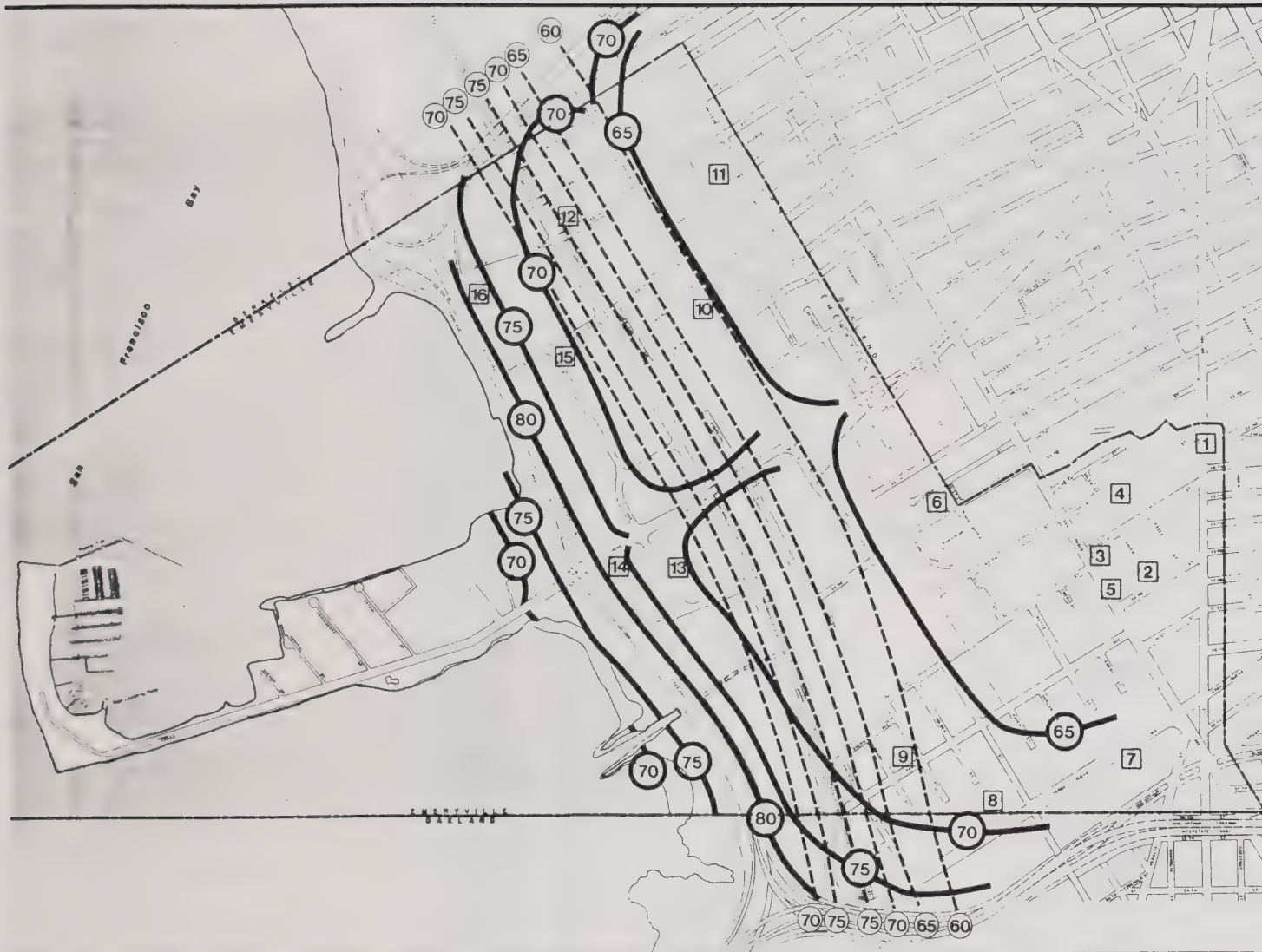


FIGURE V-4
FUTURE NOISE CONTOURS
(Ldn) AND 1985
MEASUREMENT LOCATIONS

70 SURFACE ROAD NOISE LEVELS, dBA
75 RAILROAD NOISE LEVELS, dBA

1985 NOISE MEASUREMENTS:

	Location	Noise Sources	Measured Ldn (dBA)
1	Wonder Bread Plant	fans (50-53 dBA); distant traffic	64*
2	43rd/Salem	traffic (up to 80 dBA)	64
3	45th/San Pablo-Essex	traffic (59-69 dBA)	58
4	47th/Salem-Essex	traffic (58-72 dBA)	57
5	San Pablo/45th-Park	traffic (65-76 dBA)	66
6	53rd/Boyer	traffic; school playground	61
7	Yerba Buena/Hollis-San Pablo	freeway traffic	67
8	I-580	freeway traffic	68
9	Park/Horton-Hubbard	auto (60 dBA), truck (80 dBA) traffic; distant industrial activity	65
10	Hollis/62nd-63rd	truck traffic (70-84 dBA)	70
11	Liquid Sugar Industries	traffic; industrial activity (50 dBA)	56*
12	Bay/65th-66th	traffic; railroad	66
13	Pfizer Chemical	traffic (71 dBA); industrial activity (60 dBA)	71*
14	Powell/Christie	freeway traffic (80-82 dBA); industrial activity	74
15	64th/Christie	traffic (62-77 dBA)	68
16	I-80	freeway traffic (24-hour measurement)	80

*15-minute Leq; may be slightly lower (0-3 dBA) than Ldn.



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Note: Where surface road and railroad noise contours overlap, the combined noise level heard by the receptor is greater than the noise level from either source alone. When two sources which individually generate equal noise levels are combined, the resulting noise level is 3 dBA greater than the individual noise source. For

example, a receptor in the Bayfront exposed to 70 dBA from traffic and 70 dBA from trains would hear 73 dBA. Where the sound level difference between two noise sources is 5 dBA, the receptor hears a 1 dB increase over the louder sound.

Policies

1. Noise compatibility of new land uses and activities shall be ensured. The standards shown in Table V-4 have been developed in accordance with guidelines published by the California Department of Health Services, Office of Noise Control. These standards identify the levels of noise which are compatible with activities common in different types of land uses. They account for the relatively high levels of noise present in the existing environment by allowing slightly greater flexibility (approximately 5 dBA) in some of the outdoor environments. Recommended interior noise levels reflect the levels of sound required to carry on normal activity in each of the specified types of space. These standards should be periodically re-evaluated, and revised if necessary.

Table V-4 identifies three separate levels of standards for noise exposure: normally acceptable, conditionally acceptable, and normally unacceptable.

- Normally acceptable noise levels are those which pose no threat to the specified land use. Standard construction techniques would reduce noise from exteriors to interiors, and the expected noise levels would not disrupt activities.
 - Conditionally acceptable noise levels are those in which standard building construction would not be adequate to protect the land use. However, standard mitigation measures such as noise barriers, site design to protect sensitive uses, architectural design to protect noise-sensitive activities, or acoustical insulation could easily be employed to achieve acceptable noise levels. Many of these sound-attenuating measures are described in greater detail in Appendix G.
 - Normally unacceptable noise levels are those for which simple mitigation measures would not be adequate. The specified land uses would not normally be appropriate in these areas unless major noise attenuation measures have been designed into the project by a professional who is competent in sound reduction, and unless a detailed noise study has been conducted to assure the performance of the design.
2. Non-vehicular noise sources should be regulated to avoid disturbing adjacent uses. Non-vehicular sources of noise can be both residential and non-residential. Some residential sources of noise include barking dogs, loud music, parties, and equipment such as lawn mowers. Non-residential noise sources typically are stationary and include construction activities, air compressors, manufacturing activities, and some commercial facilities which involve loud music or large numbers of people.
 3. Noise compatibility of existing land uses and activities should be achieved. Some uses near major circulation routes are not properly insulated against noise. The standards described in Policy #1 shall determine incompatibilities.
 4. Noise emissions from all City-controlled or City-authorized activities should be minimized. The use of sirens on emergency vehicles should be limited where possible. Noise attenuation measures should be incorporated into local roadway design and traffic flow requirements. City buildings should be designed to protect employees and visitors from excessive noise.

Implementation

1. Approve, deny, or condition new projects according to the standards of Table V-4 (City). Use environmental impact reports to analyze noise impacts of new projects when necessary. If noise levels fall within the "acceptable" level, the project may proceed, barring any other constraints presented by this Plan or through new information. If noise levels fall within the "conditionally acceptable" range, the developer must provide the City with proof from a professional acoustical consultant showing that the occupants of the project will be protected from excessive noise (that is, proof that specified design and/or construction measures will lower noise levels to within the "acceptable" level). The City must approve the proposed changes; otherwise, the project shall be denied.

If noise levels fall within the "normally unacceptable" range, the project normally should be denied; however, if the development is clearly consistent with the policies in the rest of the Plan, the project may be accepted subject to the restrictions noted above.

2. Install noise barriers along roadways or railways, if necessary, to protect land uses which are severely affected by noise (City, landowners). Identify those areas which are severely affected, according to the standards outlined in Table V-4, and which would benefit from construction of a barrier. Barriers could be used to protect sensitive future land uses adjacent to the I-80 freeway or the main rail line through the City. The determination of need should be reviewed as future noise studies are completed and as land use plans change in the future.

Barriers may be constructed of a combination of landscaping, earth berms, and masonry (see Appendix G). Construction should be completed in time to serve new noise-sensitive development. Financing would primarily be the responsibility of the project developer if the proposed project falls within normally unacceptable noise levels. Where the barriers would be highly visible by residents (such as along the rail line), require landscaping to lessen the visual impact of the barrier. The City shall provide design review in order to assure continuity and consistency with the Community Design Element.

3. Review State and Federal noise legislation, and support programs which are consistent with the City's policies regarding noise reduction (City). Legislation often directs State and Federal agencies to action which can have a local effect. This program would be ongoing, to be acted upon as new noise legislation is introduced. A likely result will be noise reductions from sources over which the City has no direct control; for example, legislation may call for noise-attenuating road surfaces on federally supported freeways, or specific programs to reduce train noise.
4. Monitor and comment on activities and changes outside of the Emeryville limits that could affect the Emeryville noise environment (City). This would be an ongoing program and would include review of land use plans and programs in the cities of Berkeley or Oakland; regional plans developed by MTC or ABAG; Caltrans proposals; and changes in operations at Oakland International Airport, San Francisco International Airport, or the Alameda Naval Air Station.
5. Enforce existing State and Federal noise legislation (City). An example of this would be enforcement of the California Vehicle Code laws regarding vehicle

TABLE V-4: NOISE/LAND USE COMPATIBILITY

LAND USE CATEGORY	RECOMMENDED NOISE LEVELS, L _{dn} (dBA)						
	EXTERIOR RANGE						INTERIOR, MAX.
	50	55	60	65	70	75	80
Residential:							
Low Density							45
Medium to High Density							45
Commercial:							
Hotel							50
Office							55
Restaurant, Retail							60
Other							65
Industrial:							
Light Industrial							55
Custom Manufacturing							50 living area
Other							70
Public/Quasi-Public:							
School, Library, Church,							
Hospital, Theater							45
Other							55
Open Space:							
All Categories							--

KEY:

**NORMALLY ACCEPTABLE**

Specified land use is acceptable, assuming standard building construction.

**CONDITIONALLY ACCEPTABLE**

Standard building construction is not adequate for specified land use; however, mitigation measures may be easily employed to reduce noise to acceptable levels. An analysis of the measures by a qualified acoustical professional is required, to be approved by the City.

**NORMALLY UNACCEPTABLE**

The specified land use should be discouraged unless the City finds the project to be in the public interest and a detailed analysis by a qualified acoustical professional shows that specific measures which are to be included in the project would reduce indoor and outdoor noise to acceptable levels. The analysis and attenuation measures must be approved by the City.

operation and equipment. The police department normally enforces the Vehicle Code on an ongoing basis.

6. Consider implementation of a City noise ordinance (City). Include provisions which regulate noise from residential and non-residential sources and define limits of acceptable noise according to sound levels over ambient noise, time of day, duration and characteristics of the noise, and location of the noise source relative to sensitive uses and activities. Prohibit activities which would unnecessarily disturb the peace and quiet of neighborhoods or cause unusual discomfort or annoyance to persons of normal sensitivity.

E. HAZARDOUS MATERIALS

Introduction

Hazardous materials were used in much of Emeryville's industrial past, and they are a significant part of Emeryville's present environment. The cleanup of hazardous wastes from the past and the handling and disposal of newly generated wastes will affect people many generations from now. Site contamination may impair the City's ability to implement this Plan by increasing the costs of development, requiring certain land use restrictions, and causing delays while necessary cleanups are implemented. The City recognized the importance of this issue in its decision to include it as a separate element in this General Plan. This element primarily addresses land use compatibility where properties are known to be contaminated or where hazardous substances are used or stored on a property. Accidents involving hazardous materials are discussed in the Emergency Preparedness Element.

Hazardous materials include all flammable, reactive, corrosive, or toxic substances which, because of these properties, possess the potential to bring harm to the public or the environment.¹ Hazardous materials can be distinguished from hazardous wastes: hazardous wastes² generally are hazardous materials which have been disposed of--properly or improperly, intentionally or unintentionally. Hazardous wastes are generated primarily by industrial activities, but domestic users also are generators: cleaners, paints, and pesticides, for example, are all hazardous, as is stormwater runoff when it contains oil from the streets.

Hazardous materials represent a potential threat to those who are working with the materials and those who could be affected by its improper or accidental disposal. This element discusses the management of hazardous materials and wastes, but does not discuss response to accidents. The transportation and the accidental discharge of hazardous wastes are discussed in the Emergency Preparedness Element.

¹Air pollutants are discussed under the Air Quality Element in the Environmental Resources component of the Plan.

²Regulatory definitions of hazardous wastes are found in Subtitle C of the Resource Conservation and Recovery Act (40 CFR, parts 260, et seq.) and in the California Health and Safety Code, Sections 25110, et seq.

Agency Responsibility

Many State, Federal and regional agencies regulate hazardous materials under several legislative acts (see Appendix H). The Environmental Protection Agency (EPA) possesses broad regulatory authority over all aspects of hazardous materials generation, use and disposal, including the Superfund program to clean up inactive or abandoned sites. The California Department of Health Services (DOHS) plays a similar role as the EPA, but on a statewide level. Protection of water quality is the responsibility of the Bay Area Regional Water Quality Control Board (RWQCB). Other agencies, such as the Bay Area Air Quality Management District and East Bay Municipal Utility District, have minor roles addressing hazardous substance issues. The resources of these agencies are limited, however, and cannot be relied upon for implementation of all the policies set forth in this element. Further, these agencies can have goals and priorities that differ from those of the City.

Hazardous Waste Sites in Emeryville

Six sites in Emeryville contain evidence of hazardous waste soil and/or groundwater contamination:

- Westinghouse (Peladeau Street);
- ITT Grinnell (Hollis Street);
- Chevron (Powell Street);
- Electro-Coatings (Park Avenue);
- Emeryville Marketplace (Shellmound Street); and
- Delta-Garrett trucking terminal (64th Street).

These sites have been designated by State and Federal agencies for study and mitigation of possible public health effects. Westinghouse and ITT Grinnell have been designated as Hazardous Waste Properties by the DOHS,¹ which means that DOHS can impose land use restrictions if hazardous conditions are not mitigated. Westinghouse and Electro-Coatings also have been designated as "uncontrolled hazardous waste disposal sites" on the state Superfund list, giving them priority for cleanup.²

Abatement of the hazardous wastes present on the sites involves determination of the nature and extent of contamination, determination of responsibility, inter-agency coordination, and development of a cleanup or containment plan. Cleanup activity at one site in Emeryville (ITT Grinnell) has been postponed indefinitely, partially due to an inadequate determination of agency responsibility, tightened budgets, and misinterpreted communications between agencies.

In addition to these known hazardous waste sites, contamination may exist on other formerly industrial sites. Records of previous activities usually do not document use

¹Lloyd A. Batham III, Program Manager, Hazardous Waste Property Evaluation Unit, Hazardous Materials Management Section, California Department of Health Services. Letter to Mark Buell, Emeryville City Planning Department, April 10, 1984.

²Association of Bay Area Governments, Hazardous Waste Management: A Guide for Community Involvement in the San Francisco Bay Area, September 1983.

of hazardous materials; however, activities such as rail transportation, paint products manufacturing, metal plating, and transformer work may have resulted in site contamination.

The City is contemplating the acquisition of property interests in current and former industrial land within the City in connection with the implementation of this and other land use plans. Since the precise scope of site contamination within the City limits is unknown, such acquisitions carry with them a potential risk of liability under the federal and state Superfund laws. If the City were to acquire contaminated property requiring cleanup activities, costs of those activities theoretically could be imposed upon the City under these laws, although the EPA and DOHS usually pursue such cost recovery against those parties responsible for creating the contamination problem.

Use and Storage of Hazardous Materials

Hazardous materials currently are used in industrial operations by several companies in the Bayfront.¹ The storage of these materials is identified locally by the fire department, which conducts an annual inspection of all businesses in the City. The Alameda County Health Department is developing a program to annually inspect businesses which handle or generate hazardous wastes, based on information from the fire marshals of each city and on a determination of business types which are likely generators. This program eventually will include a waste exchange (recycling) program, to encourage the recycling of hazardous wastes in accordance with RCRA standards.² DOHS also maintains a hazardous materials exchange. The City intends to participate in these programs. These inspection programs will serve as a future record of potential hazardous wastes, and will facilitate emergency response in case of accidents.³

Objectives

- A. Protect human life and property from the threats presented by improperly managed hazardous materials and wastes in the past, present, and future.

Policies

1. Cleanup of contaminated sites within the City should be pursued, particularly where the contamination threatens public health or welfare or the implementation of this or other land use plans. Contact should be maintained with Federal, State, and regional agencies which are charged with cleanup responsibility at

¹Bill Burke, Building Inspector, City of Emeryville, November 27, 1984.

²Ed Howell, Hazardous Materials Specialist, Alameda County Health Department Division of Environmental Health, December 10, 1985.

³Emergency response is discussed in a separate element of the Plan.

sites within City limits, and the assistance of those agencies should be sought. Applicable federal and state laws, regulations, and guidelines shall be followed in responding to contamination and relevant standards should be considered.

2. Information should be sought concerning the nature and extent of property contamination within the City. In order to determine if additional sites are contaminated, historical land uses should be documented and the likelihood of hazardous materials being located on the site should be assessed. In addition, all information available from other government agencies should be sought by the City. Files on each existing and potential waste site should be maintained and periodically updated.
3. Future land use decisions shall take into account the constraints presented by the potential for site contamination. Land use compatibility shall be assured where contamination cannot be completely eradicated. Any use that could allow contact with contaminated soil or groundwater shall be restricted. Residential uses normally should not be permitted on such property because of health risks. Other uses shall be subjected to appropriate restrictions.
4. Future contamination of property within the City shall be prevented. This policy shall be implemented through careful review of new uses involving the storage, transportation, processing, or use of hazardous materials or wastes. New uses shall be evaluated by the Planning Commission, which should consult with all agencies with responsibilities and relevant expertise, including the Fire Department, Police Department, EPA, DOHS, and Alameda County Health Department. Hazardous materials or wastes generated, used, or disposed of within Emeryville shall properly be managed to prevent the creation of additional waste sites or conflicts with current or future land uses. Where appropriate, new uses involving hazardous materials or wastes shall be restricted or prohibited.

Implementation

1. Assist the County in development and implementation of a hazardous materials management ordinance (City, County). A. B. 2185, passed in 1985, creates a substantial local role in the regulation of hazardous materials handling (Health and Safety Code Sections 25500-25520). The bill requires a local administering agency to establish a plan for emergency response to hazardous materials releases; and requires businesses to establish business plans for hazardous materials handling and response to releases. The State Office of Emergency Services recently adopted regulations containing minimum standards for business plans and local agency area plans required by the bill.

A thorough County ordinance implementing A. B. 2185 is appropriate, and the City should assist in the preparation and implementation of that ordinance. The ordinance should contain the following provisions.

- All facilities storing hazardous materials on-site must possess a permit.
- Business plans approved by the administering agency should be required of all companies within the City limits using hazardous materials or generating hazardous wastes. New uses involving

hazardous materials or wastes should not be permitted without an approved business plan. These plans would map and inventory all hazardous materials, and contain a contingency plan for accidents.

- Financial responsibility for spills or unauthorized discharge of hazardous materials would rest with the user. Adequate assurances of financial responsibility should be required.
 - Information shall be available to the public, to the extent permitted by the California Public Records Act and other applicable laws.
2. Assist in the implementation of the State and County program addressing leaking underground storage tanks (LUST), or assume implementation of that program (City, County). The Sher Bill (Health and Safety Code Sections 25280-25289) regulates the storage of hazardous liquids in underground tanks. Under that bill, counties are to implement the LUST program pursuant to regulations adopted by the State. Cities are allowed to assume implementation of the program by ordinance, but an amendment to the Sher Bill directed that assumption to take place by January 1, 1986. Although local regulations conflicting with the state program are preempted, the savings provision of the bill preserves the authority of cities to adopt ordinances requiring information, conducting investigations and inspections, or implementing and enforcing the LUST program. Generally, the program requires that all facilities storing hazardous substances in underground tanks have a permit, and that the storage tanks meet minimum technological standards. The City should work with the County to ensure the county's program fully protects present and planned uses in the City. The City should consider supplementing the County program with City ordinances, as needed.
 3. Consider appropriate siting, design, and safety measures in the review of development proposals in order to protect residents, workers, businesses, and resources in the vicinity from exposure to hazardous substances (City, Alameda County Health Department). The City shall consider the constraints on development posed by existing and potential hazardous waste conflicts when reviewing project proposals. Appropriate restrictions on project development shall be imposed, and incompatible uses shall be prohibited. The City should provide adequate areas for location of appropriate facilities handling hazardous substances to meet the needs of the community and the region.
 4. Available information sources should be consulted to determine areas of potential site contamination (City). The City should conduct an initial survey of areas with potential site contamination following adoption of any specific plan or rezoning. More detailed investigation should be conducted prior to any change in use or development and at other appropriate times such as review of proposed development of adjoining properties.

Under the federal Superfund law, land owners having information that their property was contaminated were required in 1981 to notify the EPA of the existence of the contaminated site. The California Department of Health Services also has attempted to inventory the existing hazardous waste sites within the State. The City should request from these agencies the available information concerning known sites within the City of Emeryville, including but not limited to those sites on the State Superfund list. This information will serve as the basis for additional site characterization activities as necessary.

These activities may involve the circulation of questionnaires, soil sampling, and other activities aimed at identifying those contaminated sites within the City limits. Generally, this will require chemical analysis of soils for new projects on properties which may be contaminated. Where the City's authority to undertake such site characterization activity is unclear or restricted, the assistance of the EPA and DOHS should be sought.

5. Based upon the information developed under items 1 and 4, maintain an inventory of past and present hazardous materials use, disposal, and cleanup activities (City). This inventory should be consulted in connection with all land use decisions.
6. Pursue site cleanups where appropriate to facilitate implementation of this General Plan (City). Where contaminated sites have been identified, the appropriate response will depend upon the nature and extent of the contamination, the anticipated type and costs of cleanup, and the impediments to development that would result if cleanup were not to occur. The City may seek EPA and/or DOHS assistance in carrying out such site cleanup. In appropriate circumstances, where neither the state nor federal government have the resources or afford sufficient priority to a contaminated site within the City, City actions to undertake or compel private party cleanup should be considered.
7. Review and support legislation which would further reduce public risks associated with hazardous materials and wastes (City). Legislation may be introduced which would increase technical or financial support to local or regional agencies, or create programs aimed at generators of hazardous wastes. Demonstrate support for legislation which would reduce hazardous waste generation, aid in cleanup, or provide assistance for hazardous materials management.
8. Enforce legislation regarding the use and disposal of hazardous materials (City). The City can enforce its local ordinance and some State and Federal regulations on an ongoing basis. Upon finding violations, the City has several options: (1) prosecution; (2) injunction; (3) administrative action (e.g., revoking a conditional use permit); and (4) notification of State and Federal agencies (such as the EPA, DOHS, or RWQCB).¹
9. Develop a program to dispose of household and other small-generator toxic wastes (City, Alameda County Department of Health). Currently, no program exists to dispose of ordinary household hazardous wastes. These wastes, which include but are not limited to paint products, cleaners, pesticides, herbicides, and fuels, are not properly disposed of in the wastewater system. Small quantities of waste and household products are not regulated under most existing laws and do not represent enough material to facilitate proper disposal at designated hazardous waste sites. Coordinate with the County or contract with private industry to conduct an annual or semi-annual collection of hazardous wastes.

¹ Association of Bay Area Governments: Hazardous Waste Management: A Guide to Community Involvement in the San Francisco Bay Area, September 1983, p. 30.

This program could supplement education for all small or domestic hazardous waste generators through school programs, materials distributed to industry groups, and flyers distributed in the community.

10. Require sellers of known contaminated or potentially contaminated sites to complete site cleanup prior to sale or provide notice to prospective buyers as a condition of sale (City). Where appropriate, request that the DOHS designate contaminated sites as hazardous waste property. When hazardous wastes have not been removed from the property and contact with the waste is avoided only by restricting land use, notification becomes especially important for protecting the public, providing future generations with information that may become lost if not systematically recorded.
11. In order to protect against potential liability for site cleanup costs, seek site characterization and/or warranty, indemnity, insurance, or other protective measures as appropriate, where the City will be receiving legal title to property (City). The scope of these requirements will vary, depending upon the degree of concern with the parcel in question. For example, if a site owner can demonstrate through land use records that no hazardous materials are likely to have been used on the property, less extensive protective measures will be required. For land known to have been used for activities using hazardous materials, as well as land over which hazardous materials are known to have been transported (such as railroad rights-of-way), more extensive protective measures will be necessary.
12. In order to finance activities under this element, evaluate and implement appropriate user, application, and annual permit fees, cost recovery actions, special assessment, and other financing mechanisms (City). Sufficient staff and contractor support should be sought for these activities.

F. FIRE AND CRIME

Introduction

Fire and crime are common safety problems in an urban environment, largely caused by and avoidable through human action. The degree to which they represent a threat depends upon the incidents which occur, the organization of the community, and the facilities and services available in the City. Thus, this element is directly related to several other General Plan Elements; namely, Emergency Preparedness, Community Design, Land Use, Circulation, and Public Facilities.

This element deals primarily with general and project-specific fire and crime prevention while the Emergency Preparedness Element primarily focuses on the response to these hazards, by themselves and in conjunction with other public safety hazards. The Land Use and Community Design Elements describe principles of appropriate community design and site layout for fire and crime prevention and response. Provision of firefighting and police services and facilities are discussed in the Public Facilities Element. Traffic and road conditions which affect emergency vehicle access are discussed in the Circulation Element.

Fire

Fires are caused by people, either intentionally or through carelessness and error. Most fires can be prevented by appropriate site and building design, proper handling and storage of flammable materials, and careful human action. The Uniform Fire Code, which Emeryville has adopted, describes building standards which help to prevent structure-related fires. Some buildings in the City which were completed prior to adoption of these standards do not meet current codes. While most of these buildings do not represent a significant public safety risk, suppressing fires in some may prove extremely difficult, particularly in unsprinklered high-rises.

Planning and prevention, or pro-active firefighting, are probably the best protections against fire hazards. Even with careful planning, however, fires are not entirely preventable. At the point when a fire ignites, firefighting becomes reactive. An adequate supply of water, good access to the source of the flames, and a quick response from the firefighting team help to assure that the fire will be suppressed before the damage becomes too widespread.

Crime

Crime and fear of crime can represent a serious threat to the City. If neglected, it can devastate a neighborhood, ultimately affecting all activities in the neighborhood and undermining public and private development or improvement efforts.¹ Crime is generally believed to be caused by social problems such as the absence of a proper home environment, the lack of job opportunities or class and racial discrimination. While the General Plan addresses these problems by outlining policies to guide development in a socially and economically cohesive form, the complete eradication of crime is beyond the Plan's power and scope.

Traditional municipal responses to crime involve investigation, arrest and punishment. Yet fighting crime should not rely solely on reactionary activities. Crime occurs primarily when an opportunity is presented: an unlocked door in an unoccupied house, for example. The City can attempt to prevent crime by reducing the opportunities for it to occur. Community members can assist in crime prevention by increasing their own understanding of crime and by fostering a sense of responsibility for their environments.

The layout of sites and buildings and the way they are used both play a significant role in the prevention of crime. A community can prevent criminal activities through the use of "defensible space." In short, this concept involves encouraging an increased sense of territoriality among residents and increased surveillance of common areas by residents through design and land use.

¹ Richard A. Gardiner, *Design for Safe Neighborhoods: The Environmental Security Planning and Design Process*. Washington: National Institute of Law Enforcement and Criminal Justice, Law Enforcement Assistance Administration, U.S. Department of Justice, September 1978.

Objectives

- A. Protect life and property from crime and fire hazards.
- B. Provide members of the community with a sense of security.

Policies

1. High occupancy or high risk buildings constructed prior to existing codes should be retrofitted to comply with current standards, if necessary and feasible. In particular, sprinkler systems should be installed in all mid- to high-rise buildings where they are needed.
2. Adequate water supply and pressure and appropriately located hydrants shall be assured for all new development in accordance with nationally recognized standards.
3. Flammable materials shall be used and stored in a manner that will prevent their accidental combustion. Business storage and use of flammable materials is more critical than that for households; yet household compliance with recognized standards may be more difficult to achieve. Individuals are often unaware of the hazards of improper storage of a wide variety of materials in their garages, and the ease with which a devastating fire could ignite. Businesses and individuals should be informed of proper management of combustibles.
4. Critical facilities shall be designed to remain functional following a threat of fire, particularly the multiple fires that could result from a major earthquake. Flame retardant vegetation shall be encouraged for use in landscaping of critical facilities. Critical facilities include hospitals, emergency care facilities, schools, fire and police departments. The prevention of fires in these facilities is crucial due to the type of occupancy and the potentially large numbers of people who would depend on them following an emergency.
5. The City shall encourage developments which are designed to reduce the opportunities for crime to occur. This does not imply the need for fortresses to prevent crime; rather, design can "help citizens maintain control of and take responsibility for" their environments.¹ The site and building design of proposed developments should encourage inhabitants to extend their spheres of use and responsibility beyond their own residences. An individual will be more likely to feel responsible for an expanded area if that area is designed to appear as part of his or her territory. Proposed projects should accomplish the following:
 - o Open spaces, parking lots, paths, play areas, and other public spaces which can be under continuous surveillance by residents or users. Public and semi-public routes which are well defined and appropriately illuminated.

¹Richard A. Gardiner, Design for Safe Neighborhoods: The Environmental Security Planning and Design Process. Washington: National Institute of Law Enforcement and Criminal Justice, Law Enforcement Assistance Administration, U.S. Department of Justice, September 1978.

- Neighborhoods which are distinct, identifiable units.
 - Elimination of land use conflicts.
 - Clustered buildings and some highly visible shared space.
 - Reduced numbers of households sharing a common entry-way.
 - Discourage external traffic.¹
6. Mixed land uses should be encouraged where feasible and appropriate. Land uses which extend the hours of activity at a given location will permit increased surveillance, thus discouraging crime; however, conflicting land uses should not be mixed, as this could create adverse effects. For example, residential uses may often be mixed with activities that occur during the day and early evening hours, such as restaurants and retail uses, but residences should not be located adjacent to a heavy industrial area.
 7. The City shall promote informational and community-involvement crime and fire prevention programs. Programs should educate citizens on effective crime prevention and fire control measures for the home, and should encourage neighborhoods to form associations to watch for and report any suspicious activity.

Implementation

1. Require compliance with City and Uniform Fire Code standards prior to issuance of an occupancy permit (City). Review development proposals for compliance. Issue building permits pursuant to plans for compliance, and prohibit occupancy of a building prior to connection to adequate water supplies.
2. Continue annual fire safety inspections (City). Where appropriate, share information with other agencies, such as the County Health Department, which conducts an annual inspection for hazardous materials. Evaluate hazardous conditions which are not consistent with current codes, and encourage correction of conditions which represent significant hazards.
3. Promote the establishment of neighborhood crime watch programs (City).
4. Utilize community resources (such as schools and community programs) to educate citizens on effective crime and fire prevention and control (City). In conjunction with promotion of crime and fire prevention strategies, develop a program for individuals to properly dispose of flammable materials from the home.

¹One way to accomplish this is by creating cul-de-sacs, which must also be designed to accommodate emergency access. See the Emergency Preparedness Element.

G. EMERGENCY PREPAREDNESS

Introduction

An emergency is a life-, property-, or environment-threatening incident, particularly one which occurs suddenly or unexpectedly. The resulting damage is determined by the nature of the incident and the response to it. In severe disasters, the reaction to an emergency is often the major determinant of the severity of its impact, since mass confusion can cause more damage than the emergency itself. The purpose of this element is to minimize threats to public safety by preparing the City to respond adequately to potential emergencies.

Natural and man-made hazards that threaten Emeryville are described throughout the elements of the Public Health and Safety component of the General Plan. The Emergency Preparedness Element deals with generalized preparation for and reaction to geotechnical and flooding emergencies, hazardous materials accidents, fires and crime. Emergencies may occur individually or in combination with others. Although these hazards vary in degree of predictability, suddenness and severity, the response, in a greatly simplified form, is often similar:

- Search and rescue, treatment and/or evacuation of victims, and
- Assessment and repair of physical damage.

As an emergency increases in complexity, so does the response to it. For example, responding to a single-alarm fire at an empty warehouse is a much simpler task than clearing a freeway after a collision in which one of the vehicles carried hazardous or flammable substances. Even together, however, these two emergencies are much less serious than a regional emergency, such as a major earthquake on the San Andreas or Hayward Fault.

Emergencies which affect a wide geographical area, several different public agencies, or a large number of people present the most complicated response problems. The more demand the incident places on "critical facilities" and "lifelines"--hospitals, police and fire departments, transportation routes and utilities--the more difficult a coordinated and orderly response becomes. The adverse impacts of an emergency can be lessened if agencies and individuals respond in a comprehensive, rational fashion. The assurance of a rational response requires thorough preparation so that all people understand what to expect in emergency situations.

Fire and Crime. A quick response to fire and crime emergencies is determined by the street layout, traffic conditions, and the location of the responding agency relative to the site of the emergency. Although calls for police services in Emeryville are generally responded to by officers on patrol, the police station, in its current location on the Peninsula, is severed from the substantial portion of the City and the origination points of most calls. Service from the station to the eastern portion of the City, where most calls originate, is impeded by this poor access. Response from the two fire stations is generally good, except that traffic congestion in the vicinity of the Powell Street freeway interchange has slowed response times enough to require installation of a light-locking system on Powell Street. This allows the responding vehicle to hold the traffic lights, clearing the street of traffic. Fighting fires which could result from a major earthquake would be an extremely complex task, and is discussed in the section on Flood and Geotechnical Hazards.

Hazardous Materials. Several types of emergencies involving hazardous materials are conceivable. Among the possibilities are the following:

- A spill at a business, endangering the employees of the site and/or adjacent properties.
- A freeway accident involving vehicles carrying hazardous or flammable materials.
- An accident on the main Southern Pacific Railway line involving cars which are carrying hazardous materials.
- A local street collision involving trucks making a delivery to a gas station or business which uses hazardous substances.
- An accident at the wastewater treatment plant in Oakland involving chlorine gas.
- An unknown substance found on a local street.
- A break in the Southern Pacific petroleum pipeline.

As illustrated by the above examples, a hazardous materials emergency can involve either transportation or on-site accidents, accidents which may affect a wide or unknown range, and identification of unknown substances. Protecting people from hazards may involve evacuation, rerouting of traffic, emergency medical treatment, and identification and removal of the substance. In addition, since many hazardous materials are also flammable, emergency response may involve firefighting.

Prior to enactment of environmental protection laws, cleanup consisted of simply washing the substance, whatever it was, into the sewer system. It is now obvious that this response is not appropriate, and as our understanding of the problems has become more sophisticated, cleanup of spills has become increasingly complex and costly. State and Federal "Superfund" programs provide some monetary assistance for cleanup, and the Alameda County Hazmat teams can identify substances and provide technical advice and supervision for cleanup procedures.

Flood and Geotechnical Hazards. Storm flooding has a very low probability of occurrence in Emeryville. The likelihood of a flood emergency resulting from seismic activity is also relatively low. Some warning could be expected prior to any flood hazard; however, the amount of warning time may be minimal. In the case of dam failure, the warning would reach Emeryville no sooner than 15-25 minutes before the water reaches the City.

A significant earthquake along one of the major Bay Area faults could result in catastrophe for Emeryville. The earthquake by itself could cause major damage to buildings, roads, and utility lines. Combined with the potential for flooding, fire, crime and hazardous materials accidents, the problems could become greatly compounded. Both Interstate 80 (including the Bay Bridge) and Interstate 580 could

fail, communications could be disrupted, and lifeline services (water, power, waste-water treatment) could malfunction. Critical facilities and services--hospitals, emergency shelters, government institutions, police and fire departments--would be strained. Widespread confusion and panicking could impede response efforts.

The experience of the September 1985 Mexico City earthquake may offer some insight into the adequacy of emergency preparedness. Although many buildings were damaged during the event, the usual cause of major damage following earthquakes--fires--was fairly localized. Bottled propane gas was used extensively, so there were fewer gas lines to rupture. There was some leakage from the propane tanks, and one fire which resulted when the gas ignited. This is not expected to be the case for the Bay Area. Gas lines could rupture, residences are built primarily of wood, and there are more combustible materials to be found in homes and businesses.

Power generation and distribution was not adversely affected in the Mexico City earthquake, although downed distribution lines in the immediate vicinity of damaged buildings resulted in some loss of power. Interruption of telephone service was significant, due to equipment damage and loss of life among personnel when the telephone company building partially collapsed. The transportation system suffered only minor damage; in fact, the subway and the airports were immediately operational, following an inspection and roadways experienced minor buckling.

Despite the relatively good performance of most lifelines, however, it was determined that educational programs were insufficient to prepare for the catastrophe and response teams were inadequately prepared. Furthermore, there was no way to estimate the overall damage, and thus no way to determine response priorities.

Most search and rescue efforts were performed by volunteers. In fact, volunteers proved to be invaluable, since their response was immediate. Many victims were pulled from the rubble of collapsed buildings in the first few hours, primarily by volunteers. By the time specialized search-and-rescue teams arrived, it was too late to save many of the victims.¹ However, this experience also demonstrated the need to care for the volunteers, since volunteers will attempt search-and-rescue immediately, and will continue even after trained help arrives. They need to be provided with food, water, and rest; and they should be directed in their efforts as soon as possible. More than 100 volunteer workers were killed following the Mexico City earthquake while they were searching for victims when the buildings they were working through collapsed further; and many rescuers suffered kidney damage from lack of water.² A multi-disciplinary team of engineers, firefighters and medical personnel would have been useful to pick through the rubble, assess the structural damage, direct the volunteers, avert or subdue fires, and treat victims.

¹Bay Area Regional Earthquake Preparedness Project, Networks Earthquake Preparedness News, The Mexico City Earthquake of September 19, 1985: Lessons for the Bay Area, February 1986.

²Ibid.

Objectives

- A. Minimize potential damage to life, environment and property resulting from natural and man-made emergencies, through a timely, well-prepared and well-coordinated response plan.
- B. Decrease the need for emergency response by encouraging preparedness among individuals and by leading the City toward self-sufficiency where possible.
- C. Simplify emergency response by attempting to lessen confusion during and following an emergency.

Policies

- I. An emergency response plan should be maintained and periodically updated. Figure V-5 shows the known extent of potential emergencies, and illustrates designated emergency shelters and ordinary evacuation routes. It is a generalized emergency plan. A finalized emergency response plan should also consider the following:

- Emergency response involves inter-agency coordination.
- Emergency routes cannot be designated for all hazards and may not necessarily be employed as designated. The officer on the scene would evacuate people in the safest and most expedient fashion. Emergency routes can be finally designated only at the scene, and this designation depends on the characteristics of the emergency, the weather conditions, the time of day and street and traffic conditions. Figure V-5 serves as a key to the most likely routes to be operable under the conditions which are described.

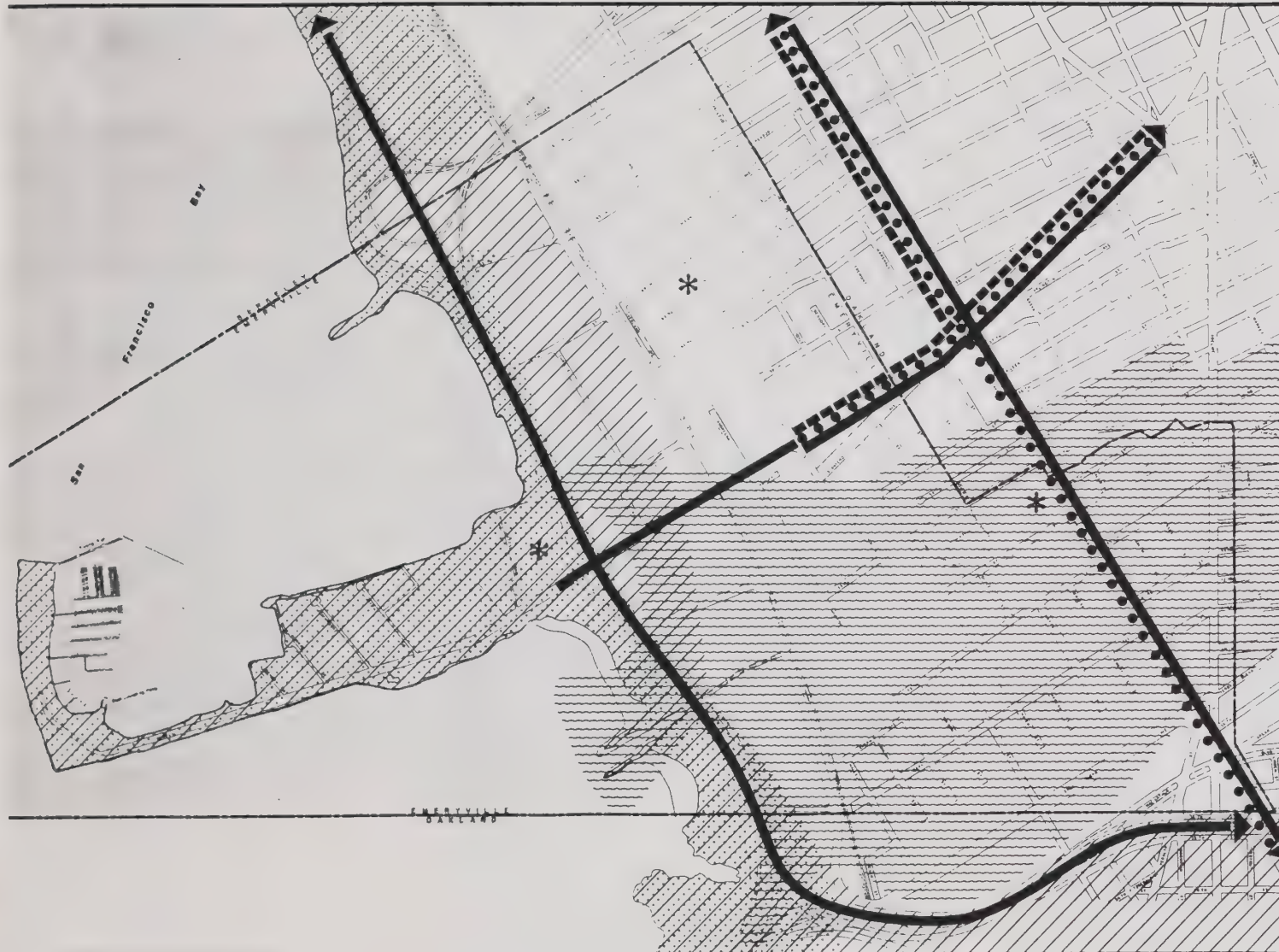
In a totally devastating emergency, road and traffic conditions could be so congested that no one would really be going anywhere. In fact, it would be more appropriate under these conditions to designate these routes as emergency access routes to allow emergency vehicles and Red Cross or Salvation Army personnel to reach the scene. During this type of emergency, the responding officer would request that people remain in emergency shelters until all emergency response teams have gained adequate access and a coordinated response plan has been finalized.

- Emergency shelters are currently being evaluated and redesignated. Of those shown in Figure V-5, Fire Station #2 at 63rd and Hollis Streets can serve as an emergency medical care facility. Designation of the Holiday Inn as a shelter is not final, pending current discussions with the owner. This structure is not sprinklered. If it is designated as an emergency shelter, the owner should be encouraged to install a sprinkler system, and the City should consider contributing to the cost in exchange for possible use of the building as a shelter.

Additional shelters will soon be determined. The fire chief may also access schools and other City facilities if necessary. Temporary

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FIGURE V-5
EMERGENCY POTENTIAL
AND
EVACUATION ROUTES



-  AREA SUBJECT TO VIOLENT GROUND SHAKING DURING MAJOR EARTHQUAKE (All other areas in Emeryville subject to very strong ground shaking)
-  APPROXIMATE EXTENT OF WATER INUNDATION FOLLOWING DAM FAILURE AT LAKE TEMESCAL
-  APPROXIMATE AREA OF TSUNAMI INUNDATION (20-foot runup at Golden Gate Bridge)
-  FLOOD INUNDATION EVACUATION ROUTES
-  EARTHQUAKE EVACUATION ROUTES
-  GENERAL EVACUATION ROUTES
-  EMERGENCY SHELTERS

Sources: Alameda County Flood Control and Water Conservation District; USGS MF-709, MF-480; SCA.



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facilities may be erected in large open areas, such as the parking lots on the Peninsula and the Emeryville Marketplace.

- A mechanism to activate Countywide coordination and communication is more critical than that for State and Federal agencies, although the appropriate response mechanisms for State and Federal agencies must also be included in any effective emergency response plan. Private institutions, namely the Red Cross and the Salvation Army, can often respond quicker than State or Federal agencies; therefore, an alert of these organizations should be built into an emergency response plan.
 - A method to assess the extent of damage should be built into the plan. In California, the Structural Engineers Association of California (SEAOC) and the American Society of Civil Engineers (ASCE), in conjunction with the State Office of Emergency Services, can provide emergency structural inspections. Under direction of local officials, they will determine if buildings, roads, bridges, and utility lines are safe for use.¹ This system is activated through the Office of Emergency Services.
 - The management of volunteer emergency workers should be addressed in the plan. Tasks for volunteers need to be determined, and the workers need to be provided with food, water, and rest.
2. Lifelines and critical facilities shall be designed and located to remain functional following a major natural or man-made disaster, when possible. Lifelines include police and firefighting facilities, water and power distribution systems, sanitation facilities, communications systems and transportation routes. The functioning of these systems is essential in the hours and days immediately following a major disaster. Critical facilities, such as hospitals, emergency care facilities, buildings which will serve as temporary shelter, or buildings which house essential public records, shall be located outside of flood potential areas and those which could experience violent ground shaking during a major earthquake.
 3. Individual and household readiness and self-sufficiency shall be promoted. Studies have shown that Interstate 80 in Emeryville would be forced to close due to soil and ground failures during a magnitude 8.3 earthquake on the San Andreas Fault.² Since overpasses could also fail, the Peninsula could be left isolated. It is possible that foot travel may be accomplished; however, evacuation and treatment of injured or disabled persons may be impeded or prevented by road closures.

¹Bay Area Regional Earthquake Preparedness Project, Networks Earthquake Preparedness News, The Mexico City Earthquake of September 19, 1985: Lessons for the Bay Area, February 1986.

²California Department of Conservation, Division of Mines and Geology Special Publication 61, Earthquake Planning Scenario for a Magnitude 8.3 Earthquake on the San Andreas Fault in the San Francisco Bay Area, 1982, p. 55.

In the event that lifelines are severed, self-sufficiency may prove to be the only assurance of survival in the course of post-disaster confusion. Each household in Emeryville--not just residents of the Peninsula--should maintain a 3-5 day supply of food, water and medication, a battery-operated radio, a flashlight and a fire extinguisher.

The need for self-sufficiency is generally understood for a potential earthquake. Although it is unlikely, isolation could also result from other disasters, such as a hazardous material explosion. All household members should know how to respond to any emergency, and potentially hazardous conditions in homes should be corrected.

4. Emergency preparedness among businesses shall be promoted. Businesses face the same emergencies that individuals and households confront, both with added complexities and increased likelihood that some emergencies will occur. Businesses which handle hazardous or flammable materials may face a compounded problem following seismic shaking in that they may have to respond to fire or toxic hazards as well as potential structural damage. A business which uses hazardous materials on the premises should designate an individual or individuals as emergency coordinator(s), and all employees should understand the potential for accidents and the appropriate response.

An incident which occurs off-site and which is caused by a business may affect employees and residents of the surrounding areas. Appropriate preparation thus requires informing nearby businesses and individuals in the community, so that anyone who could be affected is aware of the potential hazard and of an appropriate response to it.

5. The City should maintain a small amount of emergency equipment, such as hand tools, concrete saws, gloves, rope, and batteries, which could be used by rescue workers and volunteers following an earthquake emergency.
6. Timely response for emergency vehicles shall be assured. Police and fire response should not be delayed by traffic conditions or citywide access problems. Light-locking systems and other traffic measures should be installed where necessary and feasible. Emergency response facilities which are currently hindered by poor location should eventually be relocated. Relocation of the police station in a more centralized area should be considered. A fire station may be necessary west of Interstate 80 to serve emergency response purposes following any disaster which could isolate the Peninsula, if access to the Peninsula cannot be otherwise improved. Furthermore, if water mains were to break, water could be drafted from the Bay if necessary for firefighting, provided that the appropriate equipment is located on the Peninsula.
7. Adequate access for emergency vehicles shall be provided to all new development and protected for existing development when proposed road changes or new development could alter current access. Cul-de-sacs shall be less than 600 feet long and provide a turning radius of at least 45 feet. Emergency vehicle access shall be provided at the closed end of the cul-de-sac if the length and turning radius provisions cannot be met.
8. Following a large earthquake or other major disaster, reconstruction efforts shall begin, if necessary, in accordance with the goals and policies of this Plan, re-evaluating and amending the Plan as appropriate in light of new information

gained as a result of the disaster. Temporary ordinances should be developed, to be adopted following any emergency which requires major reconstruction efforts.

9. The cooperation of all public and private agencies and institutions which may be concerned with emergency response in Emeryville shall be solicited. The City should attempt to remain self-sufficient, to the extent that it is possible, since critical immediate response from neighboring or cooperating agencies cannot generally reach most points in Emeryville quickly enough. Close contact should be maintained with Oakland and Berkeley in order to assure efficient communications in the event a mutual alert is necessary. For example, Emeryville will probably have to rely on word from the City of Oakland to prepare for flooding from Temescal Creek. Emeryville should continue to participate in the Alameda County Mutual Aid program.

Implementation

1. Periodically review and update a citywide emergency response plan (City). This is the responsibility of the Fire Chief, who is currently designating emergency shelters. Evaluate and designate emergency routes, evaluate and amend the hazardous materials management ordinance (see #2, below, and the Hazardous Materials Element), reassess inter-agency coordination efforts, and determine whether additional training is needed (City, County):
2. Participate in regional programs which provide emergency preparedness training and regional coordination, as necessary (City, Federal and State agencies, private organizations). Some examples of available programs include those of the Association of Bay Area Governments (ABAG), which provides some coordination assistance and training for hazardous materials incidents, and the U.S. Army Corps of Engineers (COE), which will participate in flood emergency seminars or exercises, and will provide advice on flood fighting services.
3. Periodically evaluate lifelines and upgrade if necessary and feasible (City, Utilities).
4. Require an emergency response plan as part of a hazardous materials maintenance ordinance (City, County, businesses). Require designation of an individual within private businesses to coordinate response within the business and notification of appropriate public agencies. This individual should be trained as necessary by the business. Provide specialized training to the local response team in accordance with the needs represented by businesses within the City.

Include a public disclosure clause to provide information needed by local, state and county health officials, emergency response personnel and nearby residents. Require warnings to be posted for the public as appropriate. Trade secrets should be respected and not disclosed; except that the fire marshal and emergency response personnel must have access to all materials used. Require hazardous materials to be mapped, inventoried and reported: list chemicals used, method of storage, maximum amount, and method of disposal. Review plans periodically as citywide emergency response plan is updated.

5. Require permits for local storage and/or use of hazardous materials, and require proper storage and compliance with hazardous materials management ordinance

prior to issuance of a permit (City, County). Collect a fee on an annual basis for administration of permits.

6. Promote citizen involvement and awareness in emergency preparedness (City). Utilizing school and community resources and citizens' organizations, educate the community on appropriate preparation for and response to natural and man-made hazards. Promote fire and crime prevention measures and appropriate response to earthquakes and domestic or business-related hazardous materials incidents. Inform citizens of evacuation routes and emergency care facilities, and encourage preparation for temporary emergency isolation.
7. Educate businesses and employees on appropriate workday response to emergencies (City, private business organizations). Include small businesses and gasoline retailers in educational efforts.
8. Periodically review response times of City emergency vehicles and take appropriate measures to lower times if necessary (City). Possible measures include installation of light-locking systems in other locations, such as in San Pablo Avenue or Hollis Street; relocation of police and fire stations; and measures which improve traffic conditions.
9. Require prominent posting of street signs and numbers in all new development to aid emergency vehicles in responding to calls (City).
10. Promote safety investigations of Lake Temescal dam and update the inundation map, if necessary (City, EBMUD, County). Future investigations should note the potential for failure (i.e., earthquake magnitude or other conditions, such as a landslide into the lake, which would likely cause dam failure); and the extent of the damage following either complete failure or an internal wave large enough to top the dam, including depth of water, speed, and geographical area affected.
11. Examine insurance policies for questions relating to City liability in hazardous materials incidents (City). Establish a reserve fund or participate in an insurance program in anticipation of spill-related expenditures for which the City is liable.
12. Pursue federal disaster relief funding for reconstruction of necessary facilities and services, if appropriate, following any natural catastrophe or emergency incident (City, County, State, and Federal Governments).

APPENDICES

APPENDIX A: BACKGROUND DEMOGRAPHIC AND HOUSING DATA

The material included in this appendix was compiled in preparation of the City's Housing Element. Relevant conclusions and significant trends have been abstracted from this data and incorporated into recommendations for Emeryville's efforts to provide safe, decent, and affordable housing. Much of the 1980 Census data and a housing conditions survey was prepared for the City by Connerly & Associates, Inc.

Population

Historic Population Growth. Emeryville's population trends are measured by several local, state and federal agencies, including the U.S. Bureau of the Census. The census divides the city into three block groups, or subareas, roughly parallel to those being used in the general planning process. Block Group 1 encompasses the North End residential area; Block Group 2, the Triangle and Emery Bay Village; and Block Group 3, Watergate and Pacific Park Plaza. For the purposes of this chapter's discussion, the census block groups delineated in Figure 1 are used.

Between 1970 and 1980, Emeryville's population grew from 2,681 to 3,714, an annual average growth rate of 3.9%. The California State Department of Finance estimates the city's 1984 population had increased to 3,968, which indicates the city's annual growth rate has not slowed during the early years of this decade. The city's growth rate was significantly greater than Alameda County's annual growth rate during the 1970s of 0.3% (see Table 1). The city's growth was not, however, shared equally among the three block groups. Block Groups 1 and 2, which contain the established residential areas of East Emeryville, experienced a decline in population from 1970 to 1980 (see Table 1). Population in Block Group 1 fell 18.3% during the 1970s, while Block Group 2 experienced a 16.2% fall for the same period. The population decline in the older residential areas contrasted sharply with the growth in Block Group 3, where an increase of almost 9000% occurred. Due to the Watergate and Pacific Park Plaza projects, Block Group 3 was transformed from an area with virtually no housing to an area containing a majority of the city's population.

TABLE 1: POPULATION CHANGE, 1970-1980

	<u>1970</u>	<u>1980</u>	<u>% Change</u>
Block Group 1	977	798	-18.3
Block Group 2	1,687	1,414	-16.2
Block Group 3	<u>17</u>	<u>1,502</u>	8735.3
Total	2,618	3,714	38.5
Alameda County	1,073,000	1,105,379	3.0

Source: U.S. Bureau of the Census, 1970, 1980.

Demographic Profile. Unique changes have occurred in the demographic profile of Emeryville which will have profound effects on city services and policies, especially in the area of housing, as will be indicated later.

Age Structure. The city's age structure has changed significantly between 1970 and 1980. Most apparent has been the absolute decrease in persons 18 and under and the relative decrease of those 65 and older. From 1970 to 1980, the number of Emeryville's residents under 18 years of age fell 21.3%. While the number of persons 65 or older has increased 17.9%, the relative size of the age group as a proportion of the total population has fallen from 13.3% in 1970 to only 11.3% in 1980. Considering these trends, it is not surprising that the city's ratio of those 18 and younger and those 65 and older to those 18-64 has decreased from 0.76 in 1970 to 0.39 in 1980.

The city's age groups are somewhat segregated among the three block groups. Block Group 1 contains the greatest number of non-adults; the 18 and younger age group constitutes 41% of the block group's population (see Table 2). The remainder of the city's youth reside in Block Group 2, constituting 21% of the block group's population. Block Group 3, the fastest growing area, only has 0.4% of its population 18 years or younger. Although youth comprise relatively large proportions of Block Groups 1 and 2, their numbers decreased 17.2% and 26.3%, respectively, in the 1970s.

Block Group 2 houses 60% of the city's population 65 years or older. The elderly constitute 13.5% of Block Group 2's population. In contrast, they make up only about 5.0% in Block Groups 1 and 2 (see Table 2).

Block Group 3 is composed almost exclusively of middle-aged adults. While 51% of Block Group 1's population and 64% of Block Group 2's is between 18 and 64 years old, 91.2% of Block Group 3's population falls between these ages.

TABLE 2: AGE STRUCTURE BY BLOCK GROUP, 1980

	<u>Block Group 1</u>	<u>%</u>	<u>Block Group 2</u>	<u>%</u>	<u>Block Group 3</u>	<u>%</u>	<u>City Total</u>	<u>%</u>
Under 18	327	41.0	297	21.0	6	0.40	630	17.0
18-21	27	3.4	85	6.0	33	2.20	145	3.9
22-29	106	13.3	221	15.6	426	28.36	753	20.3
30-34	45	5.6	113	8.0	279	18.58	437	11.8
35-44	88	11.0	206	14.6	268	17.84	562	15.1
45-54	102	12.8	116	8.2	263	17.51	481	13.0
55-64	62	7.8	185	13.1	145	9.65	392	10.6
Over 65	<u>41</u>	<u>5.1</u>	<u>191</u>	<u>13.5</u>	<u>82</u>	<u>5.46</u>	<u>314</u>	<u>8.5</u>
Total	798	100.0	1,414	100.0	1,502	100.0	3,714	100.0

Source: U.S. Bureau of the Census.

Household Composition. An unusually large proportion of Emeryville's population live in non-family households. In 1980, 66.1% of the population 15 years or older were unmarried (see Table 3), of which 32.2% of those were single, 22.4% divorced, 6.0% widowed, and 4.6% separated. This prevalence of non-family households is common to all of the city's block groups although there are slightly higher proportions of married adults in Block Groups 1 and 2 than in Block Group 3, and a higher proportion of divorced in Block Group 3.

The marital status of the population bears directly on the types of households found in the city. Nearly 60.0% of the population lives in family households, and 41.0% were considered living in non-family households. Of these latter households, 78.7% were one-person households. The large number of unmarried individuals and one-person households account for Emeryville's population per household of 1.71, one of the lowest figures in the state.

Household type differs sharply among the block groups. Family households represent the living arrangement for 90.2% of Block Group 1's population and 68.8% of Block Group 2's population. In contrast, only 33.4% of Block Group 3's population was in family households. Consequently, Block Group 1 had a higher number of persons per household (2.9) than Block Group 2 (2.0) or Block Group 3 (1.3) (see Table 4).

Ethnicity. The ethnic composition of the city is presented in Table 5. Whites accounted for 58% of the population in 1980. While the city's population grew 38.5% between 1970 and 1980, the Black population grew only 4.5%. The Black population has declined in relative size when compared with the growth of other ethnic groups and constituted only 62% of the City's minority population.

There are significant differences in the ethnic composition among the block groups. Whites comprise 40.5% of Block Groups 1 and 2 but 84.7% of Block Group 3. About 86.0% of the Black population resides in Block Groups 1 and 2, with Blacks constituting a 55.5% majority in Block Group 1. The majority of the Asian community (71%) and of the Hispanic population (71%) live in Block Group 2.

Income. Income figures for the city are consistently lower than the county's. In 1980, the city's household median income (the median income of persons occupying a household unit) was \$17,102 while the county's was \$18,700 or 9% higher than the city's (see Table 6). Emeryville's income levels vary widely among the three block groups. Family median incomes (median income of individuals related by blood or marriage constituting a household) in Block Groups 1 and 2 at \$16,200 and \$13,634, respectively, were lower than the city's. Block Group 3's median family income of \$30,000, however, was 131% of the county's median. Household medians are also very low in Block Groups 1 and 2 compared to Block Group 3. Block Group 3's household median income was 37.6% higher than Block Group 1's median and 112% greater than Block Group 2's.

Variations in incomes among the block groups correspond to differences in the city's housing types. Block Groups 1 and 2 represent the older residential sections and workers are predominantly blue-collar, and in Block Group 2, in particular, there is a high proportion of fixed-income elderly. In contrast, the residential areas of Block Group 3 include the Watergate and Pacific Park Plaza developments whose residents are primarily employed in managerial and professional positions.

TABLE 3: MARITAL STATUS BY BLOCK GROUP, 1980

	<u>Block Group 1</u>	<u>%</u>	<u>Block Group 2</u>	<u>%</u>	<u>Block Group 3</u>	<u>%</u>	<u>City Total</u>	<u>%</u>
Single	167	30.9	450	37.3	428	28.6	1,045	32.2
Married, ex- cept separated	197	36.4	438	36.2	490	32.8	1,125	34.7
Separated	27	4.9	9	0.8	114	7.6	150	4.6
Widowed	29	5.4	72	6.0	95	6.4	196	6.0
Divorced	<u>121</u>	<u>22.4</u>	<u>238</u>	<u>19.7</u>	<u>369</u>	<u>24.7</u>	<u>728</u>	<u>22.4</u>
Total	541	100.0	1,207	100.0	1,496	100.0	3,244	100.0

Source: U.S. Bureau of the Census.

TABLE 4: POPULATION BY HOUSEHOLD TYPE AND SIZE BY BLOCK GROUP, 1980

	<u>Block Group 1</u>	<u>%</u>	<u>Block Group 2</u>	<u>%</u>	<u>Block Group 3</u>	<u>%</u>	<u>City Total</u>	<u>%</u>
Family	719	90.2	963	68.1	501	33.4	2,183	58.7
Non-Family	69	8.7	451	31.9	1,001	66.6	1,521	41.0
Group	<u>9</u>	<u>1.1</u>	<u>0</u>	<u>-</u>	<u>0</u>	<u>-</u>	<u>9</u>	<u>0.2</u>
Total	797	100.0	1,414	100.0	1,502	100.0	3,714	100.0
Persons per Household	2.90		2.00		1.30		1.71	

Source: U.S. Bureau of the Census.

TABLE 5: ETHNIC POPULATION DISTRIBUTION BY BLOCK GROUP, 1980

	<u>Block Group 1</u>	<u>%</u>	<u>Block Group 2</u>	<u>%</u>	<u>Block Group 3</u>	<u>%</u>	<u>City Total</u>	<u>%</u>
White	323	40.5	574	40.6	1,267	84.7	2,166	58.4
Black	443	55.5	462	32.7	143	9.5	1,048	28.2
Asian	25	3.1	217	15.3	65	4.3	307	8.3
Native American	0	-	0	-	4	0.3	4	0.1
Other	<u>7</u>	<u>0.9</u>	<u>161</u>	<u>11.4</u>	<u>18</u>	<u>1.2</u>	<u>1,186</u>	<u>5.0</u>
Total	798	100.0	1,414	100.0	1,499	100.0	3,711	100.0
Spanish Origin*	63	7.9	240	17	40	2.7	343	9.2

Source: U.S. Bureau of the Census.

* Spanish Origin includes all racial groups identifying themselves as "Spanish Origin"

TABLE 6: HOUSEHOLD AND FAMILY MEAN AND MEDIAN INCOMES, 1980

	<u>Block Group 1</u>	<u>Block Group 2</u>	<u>Block Group 3</u>	<u>City Total</u>	<u>Alameda County</u>
Households					
Median	\$16,000	\$10,359	\$22,023	\$17,102	\$18,700
Mean	19,132	12,555	25,533	20,474	21,773
Families					
Median	16,200	11,424	30,000	17,708	22,863
Mean	19,919	13,634	37,061	23,079	25,595

Source: U.S. Bureau of the Census.

Incidence of Overcrowding. The Census defines overcrowding as more than one person per room in a housing unit. In 1980, 438 (11.8%) persons lived in overcrowded conditions. Of those residents, 84.2% (369) were renters. Overcrowded units represented 5.2% (110) of the occupied housing units. The majority (57.3%) of these units were rentals.

Future Growth Trends. The Association of Bay Area Governments (ABAG) projections for Emeryville made in 1983 predicted that the city would grow substantially faster through the year 2000 than Alameda County (see Table 7). By 1985, the city's population is expected to reach 4,950, a 33.0% increase over 1980; whereas Alameda County is expected to experience a 5.9% increase. The ABAG projections indicate that by the year 2000, Emeryville will have a population of 6,800, an 83.1% increase

TABLE 7: POPULATION AND HOUSEHOLD PROJECTIONS, 1980-2000

<u>1980</u>	<u>1985</u>	<u>1990</u>	<u>1995</u>	<u>2000</u>	
Population	3,714	5,000	5,700	6,100	6,600
Households	2,132	2,950	3,360	3,700	4,030
Average Household Size	1.74	1.70	1.67	1.64	1.62

Source: ABAG, Projections - 85, July 1985.

over 1980, far outpacing the 16.4% increase predicted for the county over the same period. Over this period, ABAG predicts that the city's household size will continue to decline from its present 1.74 to 1.71 in 1990 to 1.66 by 2000. Citywide growth trends are illustrated in Figure 1.

Housing

Introduction. The provision and preservation of decent, affordable housing is clearly recognized as one of the most pressing issues facing the Bay Area. Local governments, businesses, and many special interest groups all have become housing advocates, as the supply of land has diminished and the price of shelter has risen to the point where most households can no longer dream of owning a home. Similarly, the growing recognition of how the balance of jobs and housing directly affects commuting patterns and indirectly influences air quality has reinforced efforts to locate housing near existing job concentrations. As a result, the provision of housing demands a regional perspective. At the same time, housing is a very local issue. The preservation of the housing stock contributes tremendously to neighborhood quality, to civic pride, and to the visual identity of the community. In Emeryville, the relatively large numbers of single-person households, of low-income households, and of artists and crafts people create special housing needs that cannot be overlooked.

This section briefly describes the city's existing housing stock. The discussion follows the Government Code Section 65302(c) requirements for a housing element. Much of the information presented here is abstracted from reports prepared by Connerly & Associates, Inc., retained by the city to develop background data for the city's housing element.¹ Further details on household and housing stock characteristics and on affordability can be reviewed in those reports.

Housing Characteristics. The following section is a description of the general characteristics of Emeryville's housing stock, beginning with the number, location and concentration of the different types of housing units within the city. Proportions of

¹Connerly & Associates, Inc., Emeryville Housing Element, August 1984.

Figure 1
**PROJECTIONS: POPULATION,
 HOUSING, AND EMPLOYMENT
 1980-2000**

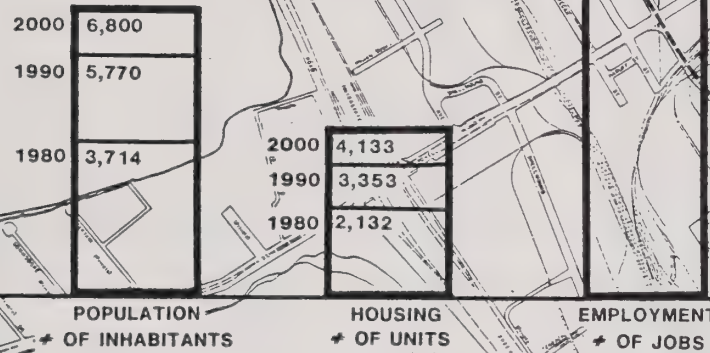
----- BLOCK GROUP BOUNDARY

A-7

FRANCISCO

BAY

SAN



SOURCE: ABAG, Projections - 83, June 1983.

EMERYVILLE
 OAKLAND

EMERYVILLE GENERAL PLAN

SEDWAY COOKE ASSOCIATES

Urban and Environmental Planners and Designers

SCALE in feet 0 200 400 600 800 1000 2000

owners and renters, housing costs, vacancy rates, and the age and condition of the housing are also discussed.

Housing Types. In 1980, there was a total of 2,416 year-round housing units in Emeryville, of which 16% (376 units) were single-family detached houses, 1.4% (33) were single-family attached houses, 6.4% (155) were in duplex buildings, 8.5% (206) were in buildings of 3-4 units, and 68% (1,639) were in buildings with five or more units. Nearly half (1,157) of the year-round units were condominiums. Of the 992 occupied condominium units, 67.3% (668) were owner-occupied.

As shown in Table 8, Block Group 1, encompassing the North End, contained the fewest housing units, less than 15% of the city's housing supply. The predominant housing type in this subarea of the city was single-family detached units. Block Group 2 contained the greatest variety of housing types and accounted for a majority in all of the housing types, except structures with five or more units. Altogether, Block Group 2, representing the oldest residential areas in the city, including the Triangle, accounted for one-third of Emeryville's housing supply in 1980. The newest residential development, found in Block Group 3, has occurred almost exclusively (99%) as large complexes of five or more units. As a result of intensive development in this subarea, Block Group 3 contained a majority (54%) of the city's housing units in 1980.

TABLE 8: YEAR-ROUND HOUSING TYPES, 1980

	<u>Block Group 1</u>	<u>Block Group 2</u>	<u>Block Group 3</u>	<u>City Total</u>
Single-Family Detached	155	221	--	376
Single-Family Attached	--	22	11	33
Duplex	42	113	--	155
3-4 Units	50	156	--	206
5 or More Units	79	272	1,288	1,639
Mobile Home	--	--	7	7
Total	326	784	1,306	2,416

Source: 1980 Census of Population and Housing, Summary Tape File 3A.

Since 1980, approximately 635 new units have been constructed in Emeryville. Roughly 90% of the new construction is accounted for by the 30-story Pacific Park Plaza project. This development marks a growing trend for Block Group 3 (the city's Peninsula and Bayfront planning subareas) to contain an increasing proportion of the city's residences.

Tenure. Of the city's occupied housing units, 57.7% (1,231) were rented, while the remaining 42.3% (901) were owner-occupied. Tenure varied tremendously, however, among block groups. Both Block Groups 1 and 2 had high percentages of renters (72.5% and 82.9%, respectively). In contrast, in Block Group 3, only one-third of the occupied units were rented and the rest were owner-occupied.

Housing Costs. The 1980 median housing unit value in Emeryville was \$47,000, 45% of the total Alameda County median housing unit value of \$84,900. Consequently,

the median monthly cost of home ownership in the city was also considerably lower than in Alameda County as a whole. In the city, the median monthly cost was \$308 with a mortgage and \$76 without; in the county, it was \$394 with a mortgage and \$100 without a mortgage. The median cost of home ownership in Block Group 1 was \$238 per month with a mortgage, \$60 without a mortgage. In Block Group 2, the cost was \$350 per month with a mortgage, \$91 without. Data for Block Group 3 were not available. Table 9 presents homeowner monthly costs.

TABLE 9: HOMEOWNER HOUSING COSTS BY NEIGHBORHOOD, 1980

	North End	Triangle
With a Mortgage		
Less than \$100	0	0
\$100-149	0	6
\$150-199	0	6
\$200-249	15	0
\$250-299	0	16
\$300-349	8	5
\$350-399	0	7
\$400-449	0	0
\$450-499	0	0
\$500-599	0	10
\$600-749	0	17
\$750 or more	0	0
Median	\$238	\$354
Without a Mortgage		
Less than \$50	9	0
\$50-74	22	0
\$75-99	4	22
\$100-124	0	1
\$125-149	0	0
\$150-199	0	0
\$200-249	0	0
\$250 or more	0	0
Median	\$60	\$91

Source: 1980 Census of Population and Housing.

Notes:

1. Information not available for Block Group III.
2. Ownership costs are defined as the sum of payments for real estate taxes, fire and hazard insurance, utilities, fuels, and mortgage.

Rental costs also tended to be lower in the city where the median gross rent was \$226, compared to \$266 in the county. Table 10 illustrates the monthly costs for rental units for each census block group.

TABLE 10: RENTER-OCCUPIED HOUSING UNITS BY GROSS RENT, 1980

<u>Gross Rent</u>	<u>Block Group 1</u>		<u>Block Group 2</u>		<u>Block Group 3</u>	
\$0-59	0	-	8	1.3%	4	1.0%
60-99	0	-	21	3.5%	0	-
100-149	24	10.8%	116	19.5%	8	2.1%
150-199	57	25.6%	206	34.6%	16	4.2%
200-249	79	34.4%	171	28.7%	6	1.6%
250-299	0	-	30	5.0%	14	3.6%
300-349	27	12.1%	27	4.5%	59	15.3%
350-399	7	3.1%	14	2.3%	112	29.1%
400-499	17	7.6%	3	0.5%	129	33.5%
500+	0	-	0	-	30	7.8%
No Cash Rent	12	5.4%	0	-	7	1.8%
	<u>223</u>	<u>100.0%</u>	<u>596</u>	<u>100.0%</u>	<u>385</u>	<u>100.0%</u>

Source: 1980 Census of Population and Housing, Summary Tape File 3A.

Vacancy. There were 284 unoccupied housing units, or 11.8% of the city's year-round housing supply in 1980. Since 180 of these vacant units were for sale or rent, the actual vacancy rate for available units was 7.5% (180 vacant units divided by the 2,416 year-round housing units). The vacancy rate for rental units was 10.5%, while the vacancy rate for ownership units was 5.4%. The State Department of Housing and Community Development's ideal vacancy rates of 6% for rental units and 2% for ownership units are based on objectives of providing sufficient mobility within the local housing market and normal turnover. Given Emeryville's housing composition, the city's ideal vacancy rate would be 4.4%. Without accounting for housing costs and preferences, there would appear to be an adequate supply of housing since the city's actual vacancy rate in 1980 was 7.5%. However, it should be noted that a majority of the vacant units are likely to be found in the more recently developed, higher-priced units in Block Group 3. Thus, the availability of affordable housing in the other areas of the city may be quite constrained. Table 11 supports this conclusion.

TABLE 11: VACANCY RATES BY BLOCK GROUP, 1980

	Block Group 1	Block Group 2	Block Group 3
Vacant Units for Sale	0	0	51
Ownership Vacancy Rate	-	-	6.1%
Vacant Units for Rent	6	27	96
Rental Vacancy Rate	2.5%	4.2%	20%
Combined Vacant Units for Sale/Rent	6	27	147
Overall Vacancy Rate	1.9%	3.5%	12.1%

Source: 1980 Census of Population and Housing, Summary Tape File 3A.

Age and Condition of Housing Stock. Nearly one-half of Emeryville's housing units were constructed after 1970. However, virtually all of these are situated in Block Group 3. One-half of the units in Block Group 1 and almost two-thirds of the units in Block Group 2 were built before 1940. The vast majority of this older housing stock is located in the Triangle (see Table 12).

In order to determine where housing rehabilitation programs might be needed, the physical condition of the older housing stock was assessed. The firm of Connerly & Associates, Inc., under contract to the city, undertook a survey of the exterior condition of housing units in much of the North End, the Triangle, and the Southern Border in 1983. It was assumed that housing units in Block Group 3 were still in good condition because of their recent construction. The criteria used to evaluate the condition of housing units was based on the Uniform Housing Code, 1979 edition. This definition contains 13 factors which should be addressed in an evaluation of a structure's condition. These elements consist of:

- Inadequate sanitation
- Nuisances
- Hazardous plumbing
- Inadequate fire protection
- Inadequate exits
- Faulty construction material
- Hazardous mechanical equipment
- Hazardous or unsanitary premises
- Structural hazards
- Hazardous wiring
- Faulty weather protection
- Inadequate maintenance
- Improper occupancy

Because the survey undertaken in connection with the housing element consisted only of an exterior review of structures, some factors listed in the Uniform Housing Code could not be thoroughly evaluated. Despite a lack of interior inspections, however, an informative assessment of the City's housing conditions was achieved.

Using the survey information obtained for the housing units, the units were grouped into three categories: good, fair, and poor. Units receiving a good rating had either no or very minor deficiencies, such as a need for paint. Those units classified as being in fair condition had several deficiencies, as defined in the Substandard

TABLE 12: HOUSING TENURE AND AGE BY NEIGHBORHOOD, 1980

	<u>North End</u>		<u>Triangle</u>		<u>Bayfront, Peninsula</u>	
Total Units	326 (13.5%)		784 (32.5%)		1,206 (54%)	
Total Units Occupied	320		741		1,071	
	<u>Rent</u>	<u>Own</u>	<u>Rent</u>	<u>Own</u>	<u>Rent</u>	<u>Own</u>
Total Units Occupied (By Tenure)	232	88	614	127	385	686
Occupied Units Built After 1970	7 (3%)	0 (--)	7 (1.1%)	0 (--)	284 (73.8%)	623 (90.8%)
Occupied Units Built 1940-1970	135 (58.2%)	22 (25%)	227 (37%)	33 (26%)	67 (17.4%)	63 (9.2%)
Occupied Units Built Before 1940	90 (38.8%)	66 (75%)	380 (61.9%)	94 (74%)	34 (8.8%)	0 (--)

Source: 1980 Census of Population and Housing.

Building Section of the Uniform Housing Code. In this classification, it was believed necessary to remedy problems with the units, but the cost to bring homes back into good condition was not extremely high and could be undertaken in most instances for less than \$5,000. Most units in this classification would require minor rehabilitation, such as paint or weatherization, re-roofing, new wiring, or minor structural repairs.

The units found to be in poor condition contained significant deficiencies as defined by the Uniform Housing Code. Bringing these units into a good condition would require major rehabilitation. Many units in poor condition would require major structural repairs, such as new foundations. Several units in this classification were believed to be unsuitable for major rehabilitation and should be demolished to remove safety hazards. Of the units surveyed, 69.1% were found to be in good condition, 20.3% in fair condition, and 10.6% in poor condition.

The citywide Housing Rehabilitation Department is responsible for administration of redevelopment program monies for rehabilitation and for monitoring contract work for compliance. To participate in the program, owners must apply to the city.

The citywide program has also assumed responsibility for the Neighborhood Conservation Services program. Initiated in Emeryville in 1980, the program used a site selection committee to determine the target areas. Committee members followed general criteria in defining the areas:

- manageable size--approximately 100-150 units;
- basically sound housing structures in need of repair;
- a large number of owner-occupied structures;
- distinct boundaries;
- an area large enough to stimulate the imagination of those who invest their energy and funds, but small enough to permit an early visible success;
- an average repair cost consistent with resources available; and
- resident interest committed to the success of the improvement effort, gauged in part by their past participation in other city rehabilitation programs.

Windshield surveys of the city's older stock were performed in the spring of 1984 to help select target areas. Covering the same area as the earlier Connerly & Associates field work, Neighborhood Conservation Services staff examined about 340 properties, representing approximately 640 units. Similar to the Connerly & Associates study, 10-15% were found to be in poor condition, although a smaller percentage was found to be in good condition (56% compared to 69%).

The monies made available through the program are geared toward total neighborhood revitalization, meaning they can be used for landscape and sidewalk improvements as well as housing improvements. For rehabilitation work, the program administers a revolving loan which is funded by the city each year. The program then makes loans to residents within the target areas who cannot otherwise obtain conventional loans. The interest rates and terms of the loans vary, depending on the ability of the owner/property to pay. Direct grants, such as Community Development Block Grants, are used to fund landscape sidewalk improvements and tree planting projects.

Housing Needs

Affordability and Special Housing Needs. As noted earlier, there would appear to be an adequate supply of housing because of the relatively high vacancy rates. However, the reason for the unoccupied units may reflect housing costs beyond the ability of people to pay. Thus, the issue of affordability must be considered in assessing the city's housing situation. Certain segments of the population have special housing needs because of the affordability issue. These groups are described below.

Low and Moderate Income. The most widely used definitions of income groupings of population are those used by the U.S. Department of Housing and Urban Development to determine eligibility for federal housing assistance. Applied to the Bay Area, a very-low-income household is one with an income less than 50% of the median income for the region. A low-income household is one with an income of 51-80% of the regional median income. A moderate-income household is one with an income of 80-120% of the regional median income. A household with an income greater than 120% of the regional median is considered above moderate income.

TABLE 13: LOW- AND MODERATE-INCOME FAMILIES, 1980

	<u>Block Group 1</u>	<u>Block Group 2</u>	<u>Block Group 3</u>
Distribution of Low-Income Families	31%	57%	11%
Percentage of All Families	61%	73%	18%
Distribution of Moderate- Income Families	29%	36%	35%
Percentage of All Families	26%	21%	25%

Source: 1980 Census of Population and Housing, Summary Tape File 3A.

Note: The Alameda County median family income figure is used.

Using Alameda County's median family income figure (\$22,863), 51.6% of Emeryville's population would be considered low income. In 1980, 23.6% of Emeryville's families earned incomes between 80% and 120% of the countywide median family income. Table 13 presents the distribution of the low- and moderate-income family population among block groups.

The Emery Glen public housing project, the rental rehabilitation loan program, and the Emery Bay Village condominium development are part of the city's housing program designed to alleviate the burden of housing costs for low- and moderate-income families. Additionally, the city is mandated to provide for a fair share of the region's housing needs across the range of income levels by federal and state law. ABAG has projected a total of 1,221 new units for Emeryville between 1980 and 1990, of which 317 are designated for very low income, 220 for low income, 269 for moderate income, and 415 for above moderate income.

Elderly. Nearly three-quarters of the city's elderly population lived in Block Groups 1 and 2, and of those who live in poverty, 90% lived in Block Group 2. This segment of the population is especially vulnerable to rising housing costs because they often live on fixed incomes.

Physically Disabled. In 1980, 5.3% (197) of the city's population had a disability which prevented these persons from using public transportation. Sixty percent of these were elderly persons, and 86% of the total disabled population lived in Block Groups 1 and 2. The special housing needs of this group are location convenient to services, accessibility, and interior design features to increase livability.

Female-Headed Families with Children. This population segment represents an increasing portion of Emeryville's population. In 1970, 20.7% of the families with children were headed by a single female. By 1980, that number had grown to 53.2% of all families with children. Of those families, 29.5% lived in poverty. The entire population of female-headed families was concentrated in Block Groups 1 and 2. Since many of these families with female heads are low-income, it is important to provide low-cost housing opportunities suitable for child-rearing.

Live/Work Space for Artists. A group of people with unique housing needs who live and work in Emeryville are artists who have traditionally found studio and living space in warehouse and light industrial districts. Emeryville, once a haven for artists forced out of San Francisco by rising costs, may also become out of reach for this group without special assistance.

Regional Housing Need

The method used to calculate the existing and projected housing need for the ABAG region and for each of its cities and counties is designed to reflect the factors prescribed in Section 65584 of Article 10.6. Changes in vacancy rates and in housing values and rents are used as indicators of market demand. Household projections are based on consideration of employment opportunities, the availability of suitable sites and commuting patterns. Type (single vs. multifamily) and tenure (owner vs. renter) are reflected in the calculations, based on the 1970 and 1980 Census information. This determination relies heavily on available data contained in the U.S. Census for 1970 and 1980 and more recently updated regional projections.

- Step 1: Calculate "available housing" (Aho) in 1980 and 1970. This includes all occupied units plus those vacant units that are available for permanent, full year occupancy. Vacant units excluded are second homes, units awaiting demolition, those used for seasonal and migrant housing, and those reported by the Census as "vacant other," where the tenure and/or the reason for vacancy were not known.
- Step 2: Calculate the available vacancy ratio (a) which measures the difference in the amount of vacant available housing, 1970 to 1980, in each jurisdiction.
- Step 3: Calculate the housing cost-to-income ratio (b+c) which measures the difference between the rate of increase in housing costs, 1970 to 1980, and the rate of increase in median family incomes over the same period. This is actually calculated in two parts—one reflecting change in the median value of owner-occupied housing, the other reflecting change in median rent paid for all renter-occupied housing. The two parts are combined and weighted according to the relative proportions of homeowners and renters living in each jurisdiction in 1980.
- Step 4: Calculate the "available vacancy rate" (AVR) which measures the proportion of available housing that was vacant and available for occupancy in 1980, i.e., either for rent or for sale.
- Step 5: Calculate the "optimal vacancy rate" (OVR_{80}) which is based largely on the "available vacancy rate," but also reflects an adjustment based on a combination of the factors calculated in Steps 2, 3, and 4 above. Also reflected in the "optimal" rate is a regional vacancy goal, postulated at 4.5%, which is used as a weighting factor in adjusting each jurisdiction's "available" rate to its "optimal" rate.
- Step 6: Calculate the "existing housing need" (N_E) which is the additional number of units derived from the "optimal vacancy rate" in excess of the number available in 1980. If the 1980 available stock had been increased by the number of units calculated as the "existing need," there would theoretically have been enough housing to have kept the market in a better

balance between demand and supply than was the case. That is, prices and rents would have increased more in line with household incomes. Moreover, those seeking housing in the area would theoretically have had a similar range of choices in terms of the number and price range of units available in 1980 as in 1970.

- Step 7: Estimate "available housing" (Aho) 1980, for each "subregional study area" (SRSA), where the LAFCO sphere of influence or urban service area boundary has been used instead of the municipal boundaries to project household growth. Since household forecasts have been developed for SRSAs, the projected housing need figures are also developed for SRSAs. The estimate of available housing for the SRSA is derived by first calculating the ratio of SRSA households to Census households, and second applying that ratio to the Census count of available housing units.
- Step 8: Calculate the "optional vacancy rate" (OVR₉₀) for each SRSA. This is done by averaging the optimal rate calculated in Step 5 above for each city with that for the county and for the region, for which the optimal rate is taken as .045. If the "optimal rate" used in the "existing need" determination was also applied in the "projected need" determination, the result would be an excess of projected vacant units over the household growth forecast, beyond the amount of vacant housing needed for normal turnover.
- Step 9: Calculate the "projected housing need" (Np) which is the number of units needed to provide for projected household growth and, at the same time, keep the market in balance. It includes the number of units calculated as the 1980 "existing need," plus the number required to provide for the projected household growth between 1980 and 1990.

It represents the net increase required in the number of housing units available in 1980, in order to accommodate the demand expected by 1990. Any demolitions or conversions, resulting in loss of housing units, would have to be made up by additional production. Any such losses should be calculated for individual jurisdictions in their housing elements.

Table 14 shows existing and projected housing needs, by jurisdiction, of Alameda County. The existing needs calculations provide an audit of the region's housing stock situation in 1980. In reviewing the table, it is important to keep in mind that need refers to the required net addition to the housing supply available in 1980. The projected housing need is a net figure and includes, in addition to newly built units, the conversion of single family homes into multiple units, rehabilitation of currently uninhabitable units, addition of secondary units and other increases in the total number of units. Existing need is calculated for incorporated areas, using 1980 municipal boundaries. "Co. Rem." refers to the county remainder--the total unincorporated area in each county in 1980.

ABAG, in making its determinations of regional housing needs, is required to consider the need for housing at all income levels. Section 65584 of Article 10.6 of the Government Code defines each locality's share of the regional housing need as:

. . . that share of the housing need of persons at all income levels within the area significantly affected by the jurisdiction's general plan.

TABLE 14: EXISTING AND PROJECTED HOUSING NEED*
ALAMEDA COUNTY AND CITIES

<u>Jurisdiction</u>	<u>Existing Need* 1980</u>	<u>Project Need* 1980-1990</u>
Alameda	255	3,161
Albany	78	692* (accepted revision from 854)
Berkeley	761	1,611
Dublin	296	1,956
Emeryville	4	1,221
Fremont	182	10,137
Hayward	130	5,535
Livermore	808	4,311
Newark	246	2,054
Oakland	1,313	7,290
Piedmont	164	177* (revision not accepted)
Pleasanton	803	4,274
San Leandro	226	2,876
Union City	55	1,931
Co. Rem.	276	3,588
County	5,597	50,814* (revised county total)

*"Need": Net addition to available stock. Projected Need includes Existing Need.

The Government Code also requires that the distribution of regional housing need "seek to avoid further impaction of localities with relatively high proportions of lower-income households." State law does not define impaction. It does not prescribe numerical terms under which a community is considered to have a relatively high number of lower-income households. It is noted that over 40% of Emeryville's households are classified as "very low" or "low," using definitions of income groupings developed by the U.S. Department of Housing and Urban Development to determine eligibility for federal housing assistance. Within all of Alameda County, approximately 44% of the households fell into these categories.

The Census reports a 1979 median household income for the entire Bay Area region as being \$20,607. Thus, a household with an income of less than \$16,487 would be very low-income or low-income. A household with an income of from \$16,487 to \$24,728 would be considered moderate-income; an income of greater than \$24,728 would be above moderate income.

Since AB 2853 requires each council of governments to determine regional housing needs, what is implied by a determination of household need by income category is movement toward the regional distribution of household income. The existing city percentages are averaged with the existing county and regional percentages to determine the percentage to be applied to the projected housing need to promote a

more equitable distribution of housing opportunities within the Bay Area. The resulting numbers from the procedure described above (see Table 15) do not imply that each jurisdiction must produce the identified amount of very low, low-, moderate-, and above moderate-income housing. The numbers do imply a net increase in the number of available units in each of these income categories.

Constraints to Housing Production

There are several types of constraints to housing production: those resulting from government action, physical/environmental constraints, and economic or "market" constraints. Each of these types of impediments to housing production influence the location and density of new housing.

Governmental Constraints. Governmental constraints to housing can arise from activities of the federal, state, regional (Bay Conservation and Development Commission), or local levels of government. This section addresses only local government activities over which Emeryville has direct control.

With only 16 vacant residential lots in Emeryville east of Interstate 80, local government constraints do not pose a significant obstacle to residential development in these neighborhoods. Most new residential development must then occur in the areas presently used for warehousing and manufacturing. As some of these industries relocate or discontinue production, it is being recommended that appropriate sites become available for medium density residential development.

Due to the low volume of permit applications, Emeryville is able to process proposals quickly, usually within a month's time, for relatively straightforward projects. In the City's effort to promote more housing for business employees, large projects must undergo a more extensive review process.

Zoning. Emeryville's zoning districts are based on the "telescoping" method, which allows residential uses in all zones in the City (except as modified by the City's redevelopment plans). Each subsequently more intensive land use--commercial, industrial, etc.--is restricted to certain zoning districts.

There are two residential zones in Emeryville, R and R-PCD--residential and residential/planned community development. The North End and the Triangle are primarily zoned R, while the Bayfront and Peninsula are primarily R-PCD.

The zoning district "R" restricts residential density by setback, lot coverage, and height requirements. However, for the 16 infill lot, some of these restrictions are likely to be waived to permit higher density development.

The R-PCD district allows high density residential uses on large lots to realize housing developments which are well planned, contain on-site amenities for residents, and conserve natural features.

Development Fees. Permit fees charged by the City are comparable to other Bay Area communities. Planning fees are listed below.

TABLE 15: PROJECTED HOUSING NEED BY INCOME CATEGORY
ALAMEDA COUNTY AND CITIES

<u>Jurisdiction</u>	<u>Very Low</u>	<u>Low</u>	<u>Moderate</u>	<u>Above Moderate</u>
Alameda	790 (25%)	569 (18%)	664 (21%)	1,138 (36%)
Albany	187 (27%)	125 (18%)	145 (21%)	235 (34%)
Berkeley	483 (30%)	274 (17%)	306 (19%)	548 (34%)
Dublin	391 (20%)	274 (14%)	450 (23%)	841 (43%)
Emeryville	317 (26%)	220 (18%)	269 (22%)	415 (34%)
Fremont	2,230 (22%)	1,521 (15%)	2,129 (21%)	4,257 (42%)
Hayward	1,328 (24%)	941 (17%)	1,218 (22%)	2,048 (37%)
Livermore	948 (22%)	647 (15%)	905 (21%)	1,811 (42%)
Newark	411 (20%)	288 (14%)	452 (22%)	903 (44%)
Oakland	2,187 (30%)	1,239 (17%)	1,458 (20%)	2,405 (33%)
Piedmont	35 (20%)	25 (14%)	32 (18%)	85 (48%)
Pleasanton	898 (21%)	598 (14%)	855 (20%)	1,923 (45%)
San Leandro	719 (25%)	489 (15%)	604 (21%)	1,064 (37%)
Union City	425 (22%)	290 (15%)	425 (22%)	792 (41%)
Co. Rem.	861 (24%)	574 (16%)	753 (21%)	1,400 (39%)
County	12,210	8,074	10,665	19,865

- | | | |
|----|---|---------------------|
| 1. | Petition for Development Review
(projects greater than 10,000 square feet) | \$200 |
| 2. | Variances | \$100-300 |
| 3. | Conditional Use Permits | \$150-200 |
| 4. | Rezoning | \$400-500 |
| 5. | Tentative Subdivision Maps
Final Maps | \$300-800
\$200 |
| 6. | Request for Environmental Review
Initial Study
EIR | \$100
Cost + 15% |
| 7. | Development Agreement | \$5,000 |
| 8. | Owner Participation Agreement | \$4,000 |

Building and Project Design Review. The City uses the Uniform Building Code of 1982 and other model codes without local additions. Design review is conducted on redevelopment projects according to the City's redevelopment plan.

Redevelopment Plan. On balance, the City's redevelopment plan will promote additional housing development and the conservation of existing units. The plan specifically calls for office, commercial, and light manufacturing uses in much of the redevelopment area. However, new residential uses will be actively promoted within an area near Interstate 80. The provisions of the redevelopment plan pertaining to residential uses are summarized below.

- North End Planning Area (1). Rehabilitate existing residential areas, develop new low- and moderate-income housing, and develop a more cohesive residential community by elimination of inappropriate commercial and industrial properties.
- Triangle Planning Area (2). Conserve existing residential areas by eliminating the extensive mixed uses and the deteriorating physical quality of improvements in the area.

Physical/Environmental Constraints. The two primary physical/environmental constraints to residential redevelopment in Emeryville are the condition and capacity of streets, utilities, and other municipal facilities, and the preservation of open space areas along San Francisco Bay. Efforts to improve the traffic-bearing capacity of the road network is a primary focus of the Circulation Element. Other key facility improvement to accommodate further development include:

- Improvements to the Interstate 80 interchanges at Powell Street and Ashby Avenue.
- Parking structures.
- Additional crossings of the Southern Pacific Railroad main line.
- Removal of unused or underutilized rail spur tracks.
- Improvement of public infrastructure including sanitary sewer and storm drainage system in localized areas.

Economic/Market Constraints. The primary economic or market constraints to housing production in Emeryville are construction costs and mortgage financing rates. The Bank of America, in its quarterly report on Bay Area construction costs, determined that as of October 1985, the average per square foot construction cost for a standard single-family home was \$44.67. A 1,200-square-foot home with a 200-square-foot garage would therefore cost \$57,000 exclusive of land costs. Per-square-foot costs for multifamily units could be significantly higher or lower, depending on the type and quality of construction.

Interest rates for home loans will also significantly affect housing affordability. Using the \$57,000 home as an example, and assuming improved land costs of \$15,000 per unit, Table 16 shows how interest rates affect housing affordability.

TABLE 16: EFFECT OF INTEREST RATES ON HOUSING AFFORDABILITY

Interest Rate	Loan Amount*	Monthly Principal and Interest	Income Needed**	
			A	B
9%	\$64,800	\$521.48	\$25,050	\$20,850
10%	64,800	568.67	27,300	22,750
11%	64,800	617.11	29,600	24,700
12%	64,800	666.54	32,000	26,700
13%	64,800	716.82	34,400	28,700
14%	64,800	767.80	36,850	30,700
15%	64,800	819.36	39,350	32,800

* Assumes a 10% down payment.

** A - Assumes a maximum of 25% of the applicant's income can be devoted to principal and interest payments.

** B - Assumes a maximum of 30% of the applicant's income can be devoted to principal and interest payments. This level of commitment is now accepted by banks and the U.S. Department of Housing and Urban Development.

APPENDIX B: TRAFFIC ANALYSIS

Existing Traffic Conditions

Figure 1 is a map of existing principal street and the city limits of Emeryville. Some of the principal streets used by Emeryville traffic, such as San Pablo Avenue and Ashby Avenue, are in Oakland and Berkeley.

For purposes of the analysis, Emeryville was divided into 31 zones, as shown in Figure 2. The existing approximate number of employees and residential dwelling units are listed by zones in Table 1. The totals are over 13,000 employees and 2,700 dwelling units.

Some counts of existing traffic volumes were available from the Cities of Emeryville, Oakland and Berkeley, Caltrans, and previous studies by others. This analysis did not include additional traffic counts. However, the available counts were supplemented by estimates of traffic generated by existing development. Trip generation rates used in the estimate were based on the rates used in the EIR for the Amended Redevelopment Plan, Emeryville Redevelopment Agency (1983), and are listed in Table 2. The trips were distributed by direction in accordance with trip distribution percentages applied in the previous EIR and shown in Figure 3. The distribution percentages are shown separately for employee-generated and resident-generated trips. The percentages for resident-generated trips are shown in parentheses.

Traffic assignments to principal streets and intersections were made for both a.m. and p.m. peak hours to supplement available counts. Estimated existing peak hour volumes were used to calculate volume-to-capacity (v/c) ratios and intersection levels of traffic service for existing a.m. and p.m. peak hour conditions. Principal intersections are designated by numbers in Figure 4. The numbers of existing traffic lanes on each street are indicated in Figure 5, in which each line represents a single lane.

Table 3 lists the existing a.m. and p.m. peak hour v/c ratio and level of service for each of the principal intersections. The v/c ratios and levels of service do not reflect traffic conditions caused by peak hour congestion on the freeways or railroad operations. In all intersections, the p.m. peak hour is more critical than the a.m. peak hour.

Total two-way average daily traffic volumes (ADT) were estimated on the basis of the p.m. peak hour volumes. The estimated existing ADT on principal streets and p.m. peak hour levels of service for the principal intersections are shown in Figure 6. ADTs are given in thousands of vehicles (the last three zeros are omitted). The levels of service are calculated for conditions assuming traffic signal control at each intersection, although some of the intersections do not currently require traffic signals.

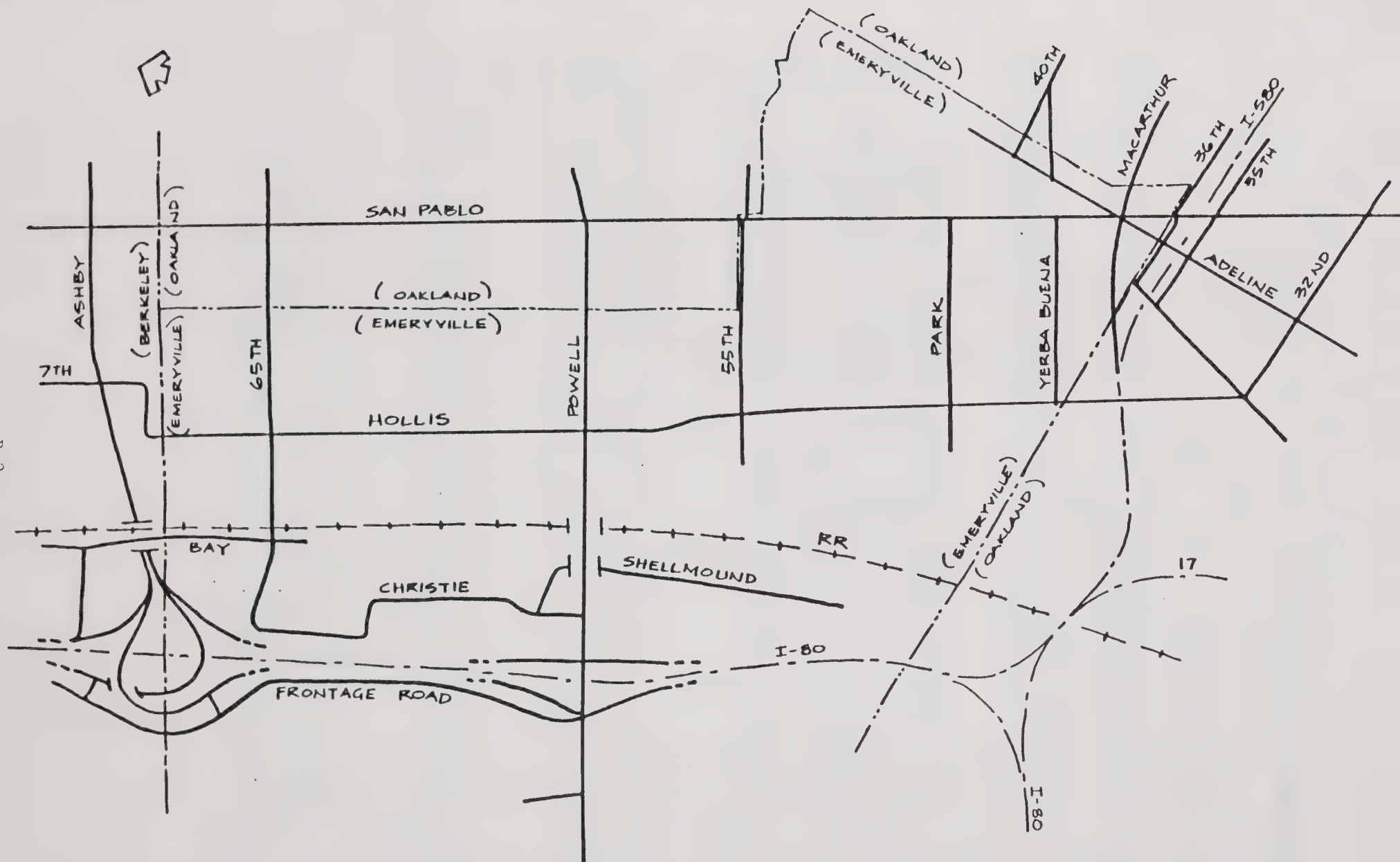


FIGURE 1

EXISTING PRINCIPAL STREETS AND CITY LIMITS

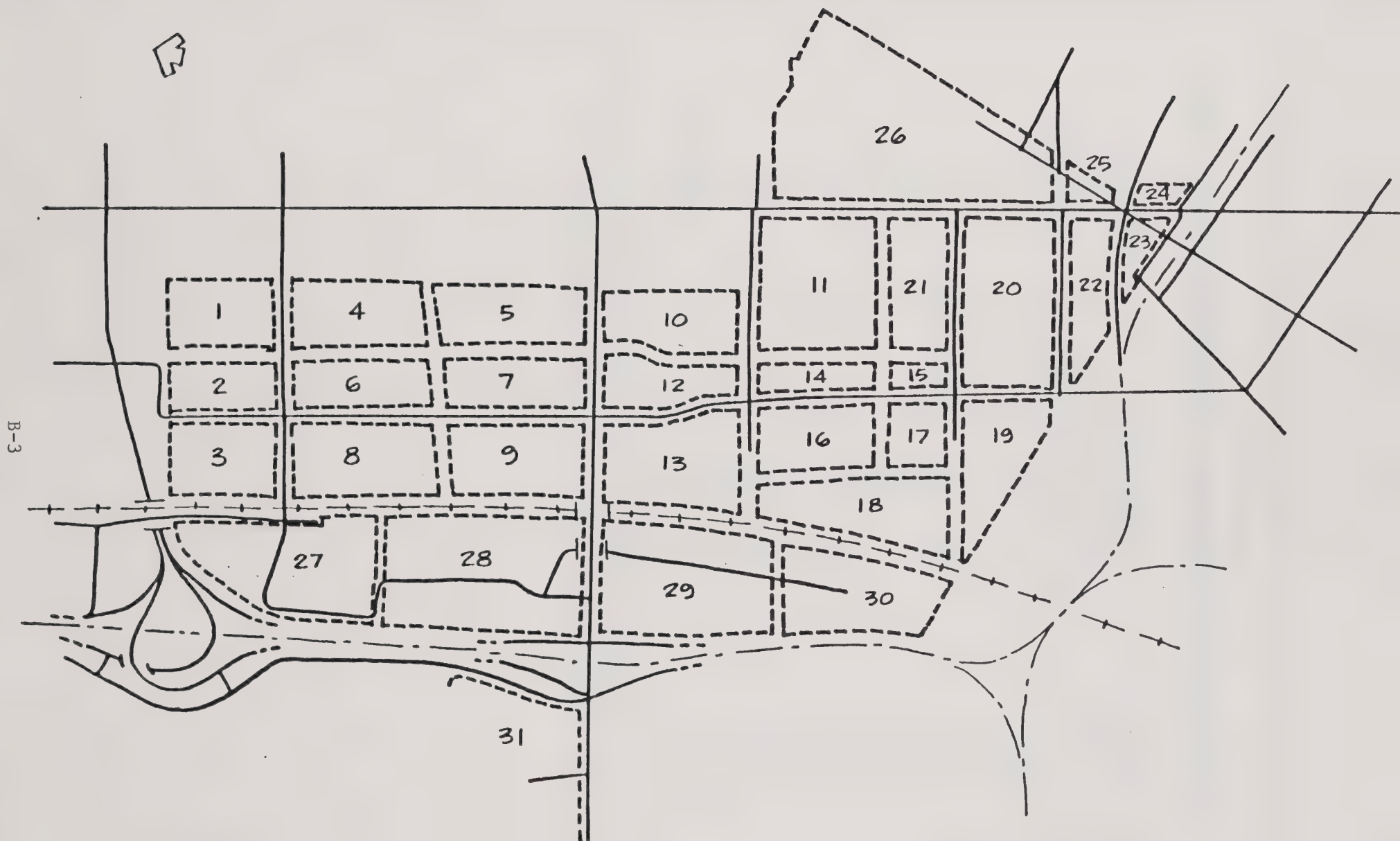


FIGURE 2

ANALYSIS ZONES

TABLE I
EXISTING NUMBERS OF EMPLOYEES AND DWELLING UNITS, BY ZONES

<u>Zones</u>	<u>Number of Employees</u>	<u>Number of Dwelling Units</u>
1-3	1,720	--
4/5	580	240
6/7	910	--
8/9	550	--
10	140	100
12	430	--
13	940	--
11/21	500	130
14/15	430	--
16/18	960	--
19	330	--
20	680	--
22/23	70	10
24/26	1,050	390
27/28	1,390	580
29/30	690	--
31	<u>2,090</u>	<u>250</u>
Total	13,460	2,700

Source: See Appendix C.

TABLE 2
GENERATION RATES OF VEHICLE TRIPS BY DIRECTION

<u>Trip Generator</u>	Trip Generation Rates Per Employee or Unit			
	A.M. Peak Hour		P.M. Peak Hour	
	<u>Inbound Direction</u>	<u>Outbound Direction</u>	<u>Inbound Direction</u>	<u>Outbound Direction</u>
Office	.37	.06	.07	.41
Retail	.22	.20	.42	.43
Commercial	.22	.20	.42	.43
Industrial Manufacturing & Wholesale	.31	.06	.08	.30
Hotel	.30	.36	.38	.35
Mixed	.30	.10	.20	.35
Residential Dwelling Units	0	.40	.35	.15

Source: Based on rates used in Final Environmental Impact Report on the Amended Redevelopment Plan for the Emeryville Redevelopment Agency, August 1983, p. 55.

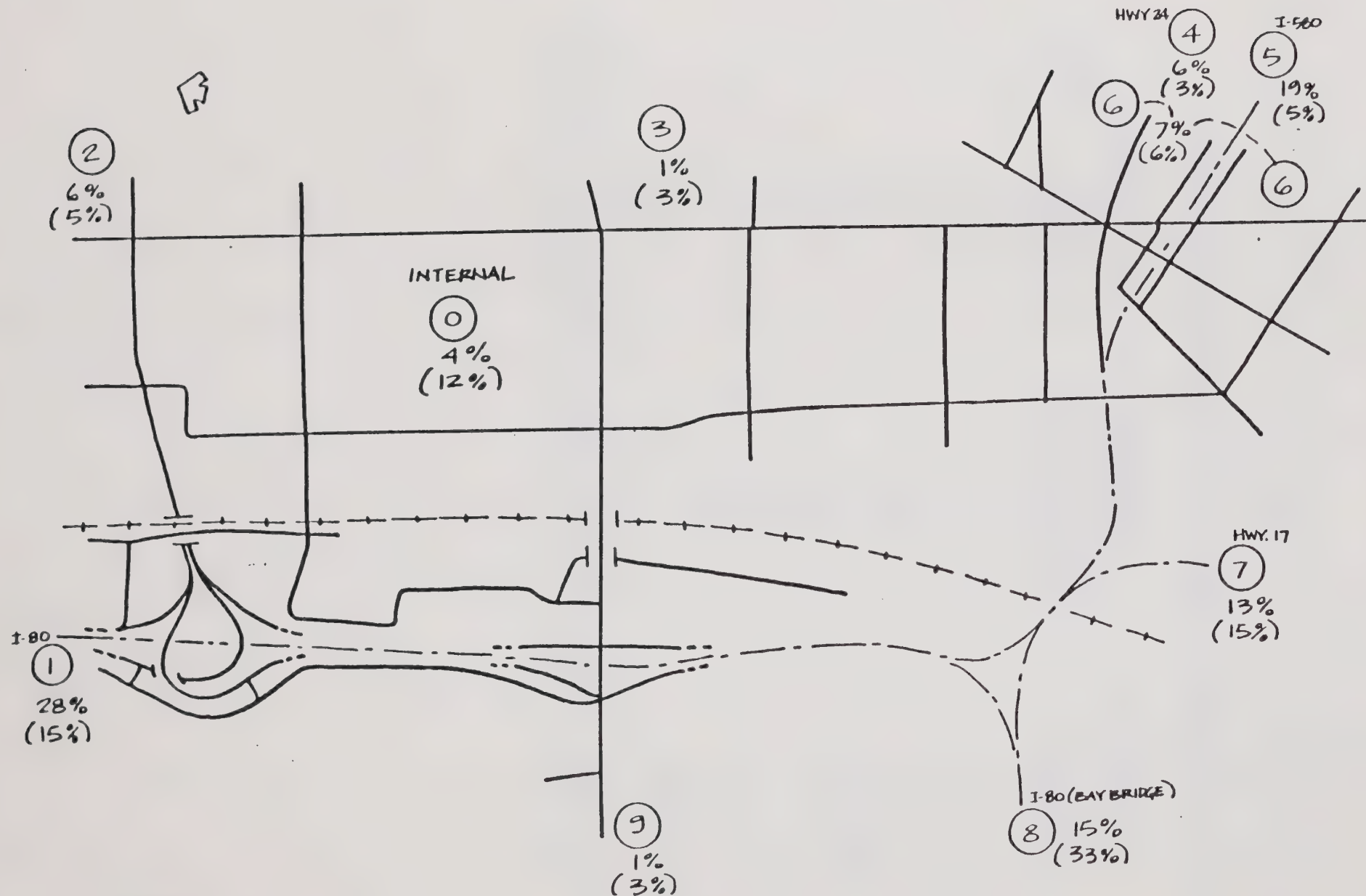


FIGURE 3

PERCENT DISTRIBUTION BY DIRECTION OF EMPLOYEE (RESIDENT) GENERATED TRIPS

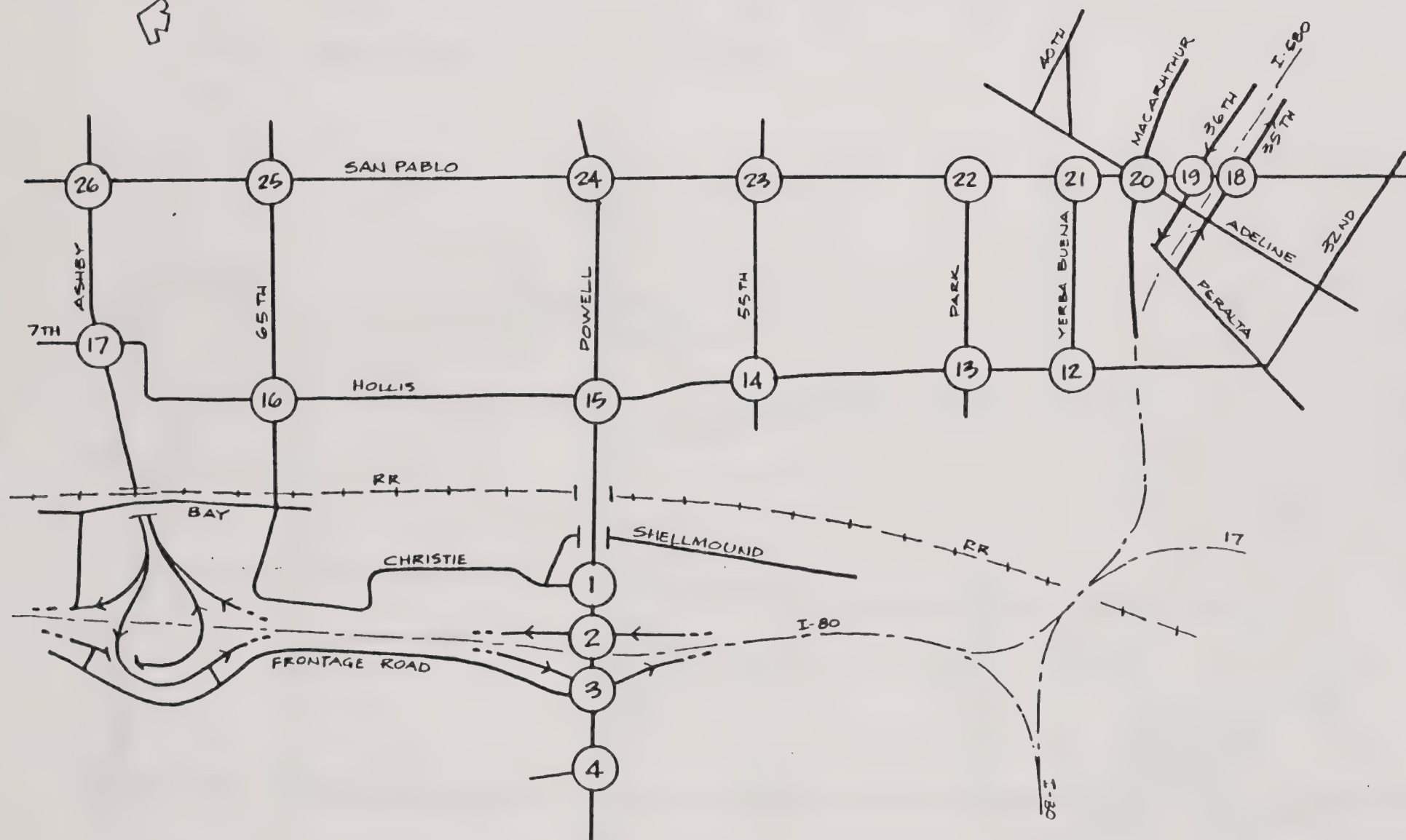


FIGURE 4

PRINCIPAL EXISTING INTERSECTIONS

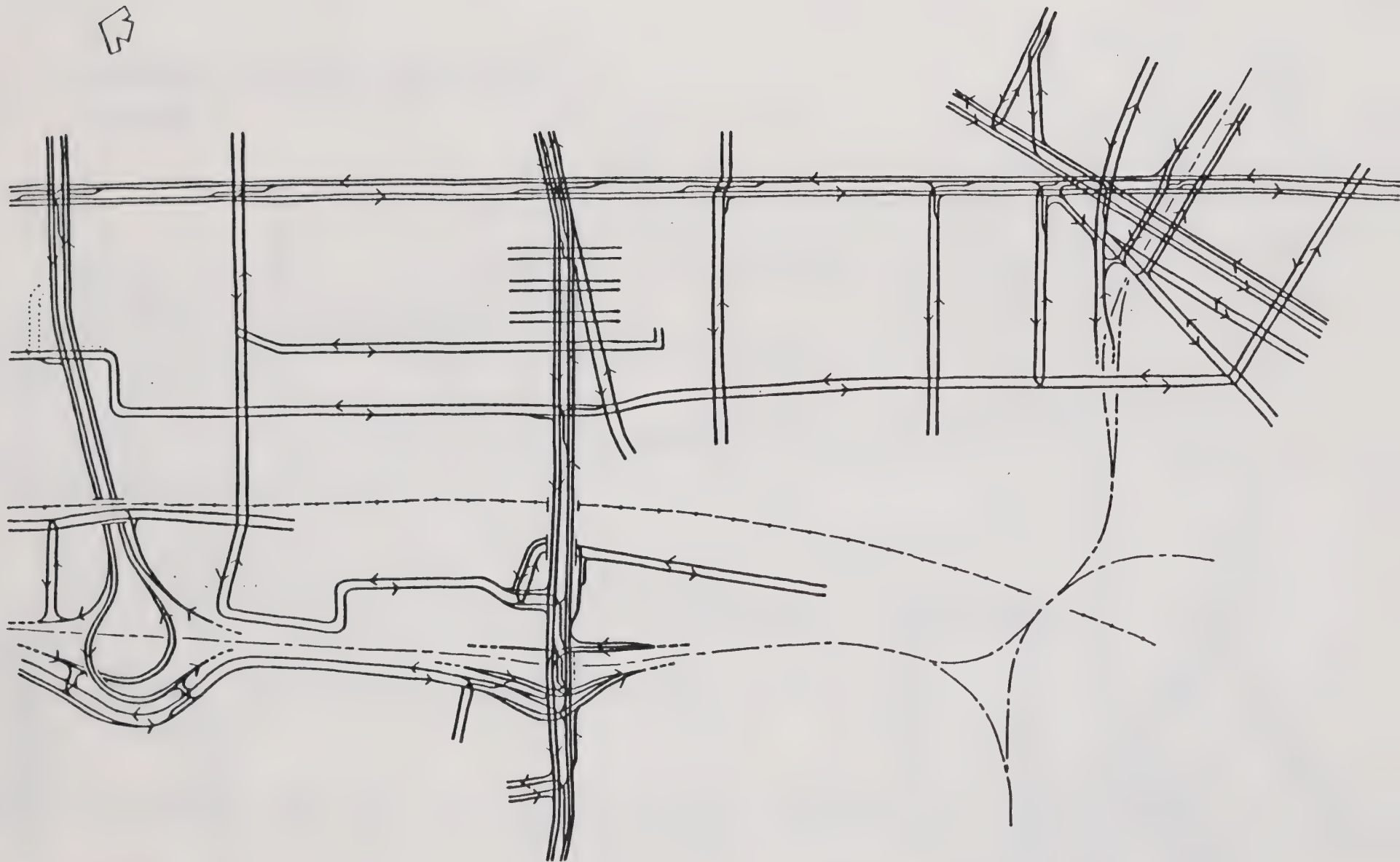


FIGURE 5

EXISTING TRAFFIC LANES ON PRINCIPAL STREETS

TABLE 3
EXISTING INTERSECTION V/C RATIOS AND LEVELS OF SERVICE

Intersection Number	A.M. Peak Hour		P.M. Peak Hour	
	<u>V/C</u>	<u>LOS</u>	<u>V/C</u>	<u>LOS</u>
1	0.52	A	0.60	A
2	0.71	C	0.74	C
3	0.68	B	0.77	C
4	--	A	--	A
12	0.08	A	0.13	A
13	0.28	A	0.32	A
14	0.59	A	0.74	C
15*	0.65	B	0.93	E
16	0.54	A	0.54	A
17	0.54	A	0.78	C
18	0.26	A	0.61	B
19	0.39	A	0.41	A
20	0.79	C	0.95	E
21	0.53	A	0.41	A
22	0.46	A	0.61	B
23	0.46	A	0.51	A
24	0.65	B	0.72	C
25	0.38	A	0.46	A
26	0.73	B	0.95	E

*Does not include effects of trains in intersection

Source: Robert Conradt

Future Traffic Conditions

Future conditions under the proposed plan call for a greater number of employees in most zones and more dwelling units in some. Table 4 lists the numbers of employees and dwelling units added, by zones. The totals are about 23,600 added employees and 2,400 additional dwelling units. Table 4 shows additional employment and housing under two scenarios: Alternative A-2 and Appendix C. The traffic analysis is based on the figures under "Alt-2," an earlier scheme for land uses in the City. The figures shown under "Appendix C" reflect the estimates of future development based on more refined information. Table 4 shows that for most zones, Alternative A-2 represents more development than Appendix C. Thus, traffic conditions based on A-2 would constitute a worst case scenario. For those zones, where Appendix C estimates were greater, Robert Conradt examined the magnitude of the change and identified those intersections where the level of service would deteriorate. This occurred only at the intersection of Powell and Hollis, where the p.m. peak level of service was downgraded from a "D" to an "E." It should also be pointed out that the Draft EIR identified three different development scenarios for the Bayfront Specific Plan (November 1985). The scenarios generating the worst traffic impacts were used in the traffic analysis.

The changes in employment and dwelling units were used to calculate added trip generation by zones, using the trip generation rates in Table 2. The added trips were then distributed, according to the percentages in Figure 3, and assigned to the principal streets and intersections on the proposed future street system. The numbers of lanes assumed for the future streets are indicated in Figure 7. Locations of principal intersections are indicated by intersection numbers in Figure 8.

Future additional trips were added to existing traffic volumes and the combined total volume was analyzed for a.m. and p.m. peak hour conditions in each of the principal intersections. The resulting v/c ratios and levels of service for future conditions are listed in Table 5. The a.m. and p.m. levels of service for intersections and the estimated future ADTs (in thousands) are shown in Figure 9.

Alternative Freeway Schemes

Figure 10 shows single-line diagrams of I-80 interchange schemes considered during initial stages of the planning effort. Scheme A is the existing condition. Scheme B is the Caltrans improvement project which will include an HOV road on the east side of the highway. SCA and the City of Emeryville have some concerns about the Caltrans project because it has features that could curtail the development that is being planned for Emeryville. SCA and Robert Conradt offered Scheme C as an alternative that would help to achieve some of the City's planning objectives. After reviewing Scheme C with Caltrans and learning their concerns about it, Robert Conradt prepared Schemes D, E, F, and G. This appendix analyzes the intersection capacities of the schemes for future traffic that will include traffic generated by new property development in Emeryville, based on SCA development plan A-2.

Existing and Future Conditions. Existing a.m. and p.m. traffic volumes available from Caltrans are shown on Figures 11 and 12. Caltrans' projected traffic for 2005, Scheme B, is shown on Figure 12. The turning movements were not shown in the Caltrans material, so they have been estimated on the basis of the existing counts.

Future traffic volumes will include traffic generated by the new development in Emeryville, as well as growth in surrounding communities. An estimate of additional traffic that would be added by new Emeryville development, according to plan A-2, was made on the basis of the differences in employment and housing units between the plan buildout and existing conditions. The employment and housing unit additions (the increments of growth only) were used to generate the additional trip ends. The trips were then distributed according to percentages given in the 1983 Final EIR for the Emeryville Plan, and the trips were assigned to streets, ramps and intersections. The resulting traffic that would be added to the existing volumes is shown on Figure 13.

The Caltrans 2005 projections show higher ramp volumes than existing conditions, and therefore include some growth from both Emeryville and surrounding communities. The process followed to derive revised ramp volumes reflecting plan A-2 and other growth involved: 1) identifying what proportion of Caltrans projections were associated with other development; and 2) replacing the proportion of trips estimated by Caltrans to derive from Emeryville and replacing that with the plan A-2 figures. The additional traffic added to Caltrans 2005 projections by plan A-2 are in Figure 14.

The total 2005 traffic, including the additional traffic generated by the development in plan A-2, is shown for Scheme B in Figure 15. Total 2005 traffic volumes for the remaining schemes are shown in Figures 16 through 22.

Conclusion. Table 6 lists volume-to-capacity (v/c) ratios for each scheme and intersection. The results indicate that the existing interchange on Powell Street (Scheme A) is already over capacity. Table 7 lists the level of service for each intersection, designated by letter.

Some of the intersections in the Caltrans project (Scheme B) would not have sufficient capacity for 2005 traffic, even without the development called for in plan A-2. Scheme B would not be adequate for the additional traffic generated by plan A-2.

Scheme C intersections appear to be adequate for future traffic, but some of the ramp volumes at the Ashby Avenue interchange are very heavy and would require additional lanes.

Schemes D through G all have comparable intersection service levels for the future traffic, including traffic generated by planned new development.

Ramp volumes are heavy, but there are opportunities in the Emeryville planning for reduction of the volumes through rerouting of trips away from I-80, spreading the peak hour traffic, shifting more trips to transit (making use of the HOV road), carpooling and other TSM measures that could be negotiated with developers.

TABLE 4

**APPROXIMATE NUMBERS OF EMPLOYEES AND DWELLING UNITS
ADDED BY FUTURE DEVELOPMENT, BY ZONES**

<u>Zones</u>	Alternative A-2		Appendix C	
	<u>Additional Employees</u>	<u>Additional Dwelling Units</u>	<u>Additional Employees</u>	<u>Additional Dwelling Units</u>
1-3	--	--	-8-	--
4/5	--	--	-60	10
6/7	400	70	620	70
8/9	2,400	150	2,040	160
10	--	60	-120	90
12	600	--	580	0
13	1,000	--	700	0
11/21	100	600	-100	720
14/15	100	--	--	0
16-18	1,350	--	1,680	0
19	300	--	360	--
20	1,050	--	670	--
22/23	500	--	420	-20
24-26	200	--	-140	30
27/28	6,280	430	8,680*	950
29/30	4,830	30	5,670*	370
31	<u>2,450</u>	<u>--</u>	<u>2,680</u>	<u>0</u>
Total	21,560	1,340	23,600	2,380

Source: Sedway Cooke Associates

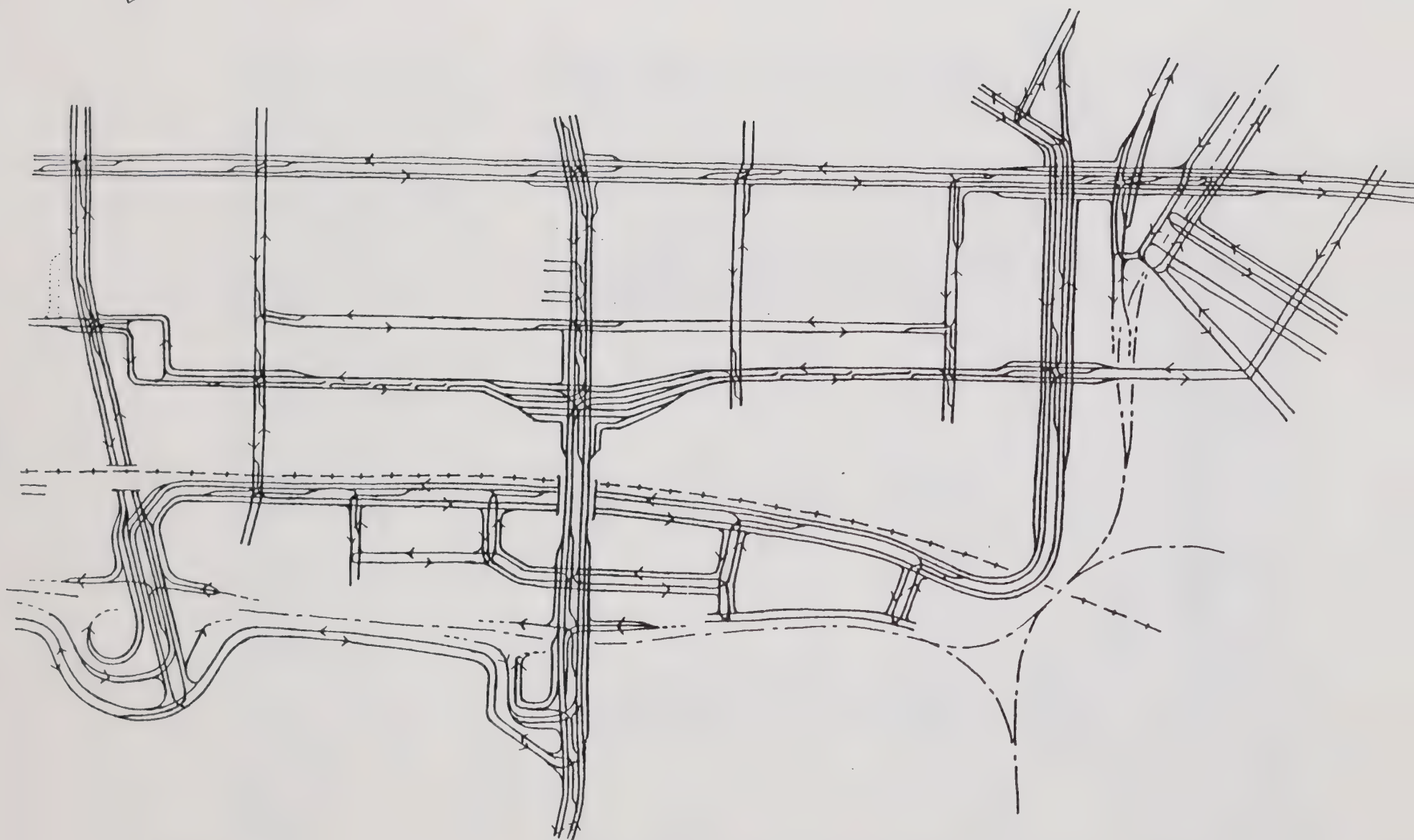


FIGURE 7

TRAFFIC LANES ASSUMED ON PROPOSED FUTURE STREETS

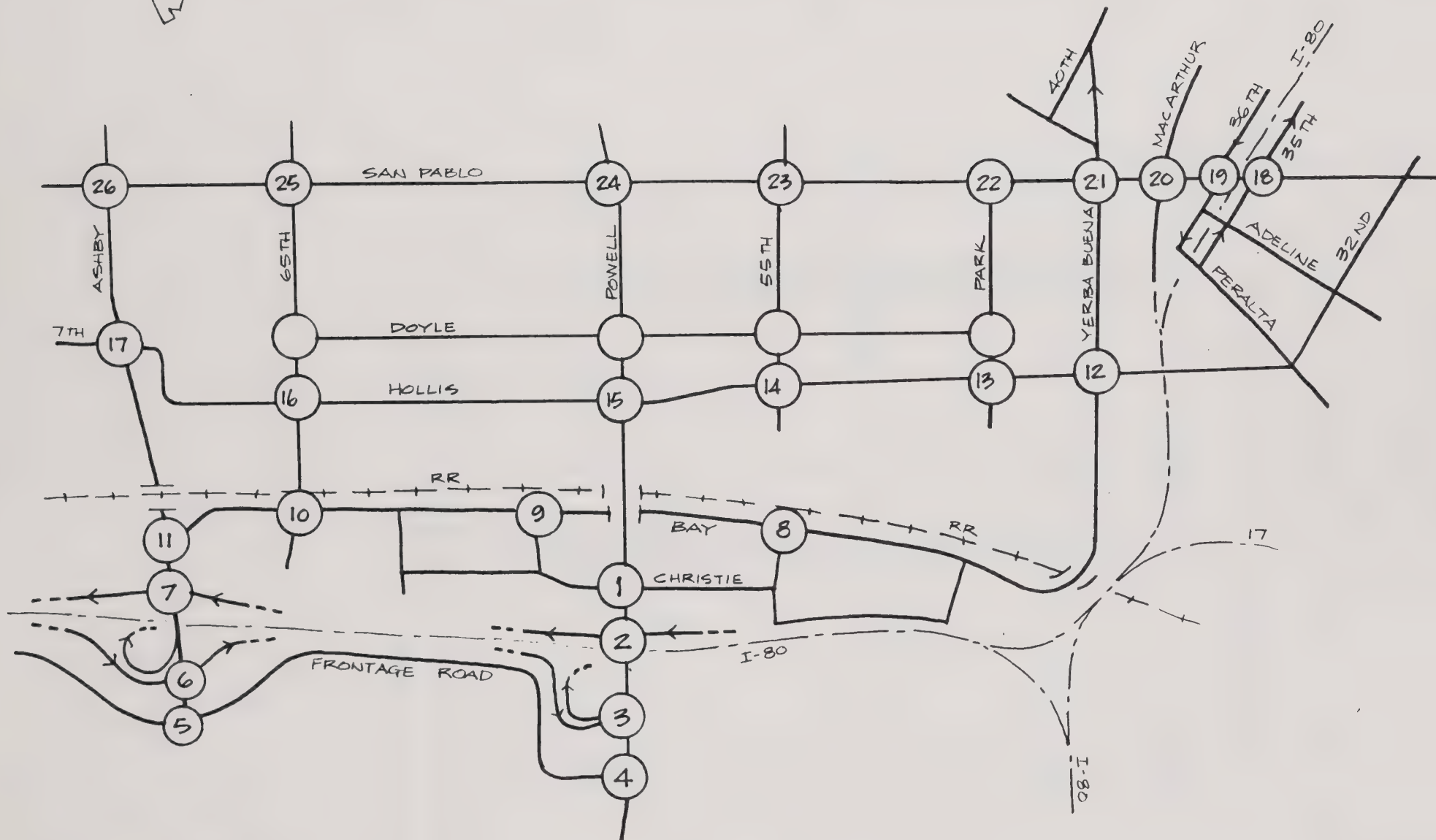


FIGURE 8

INTERSECTIONS ON PROPOSED FUTURE PRINCIPAL STREETS

TABLE 5
FUTURE INTERSECTION V/C RATIOS AND LEVELS OF SERVICE

Intersection Number	A.M. Peak Hour		P.M. Peak Hour	
	<u>V/C</u>	<u>LOS</u>	<u>V/C</u>	<u>LOS</u>
1	0.91	E	0.81	D
2	0.87	D	0.98	E
3	0.95	E	0.99	E
4	0.36	A	0.62	B
5	0.33	A	0.65	B
6	0.52	A	0.37	A
7	0.88	D	0.75	C
8	0.37	A	0.68	B
9	0.34	A	0.58	A
10	0.71	C	0.80	C
11	0.66	B	0.87	D
12	0.48	A	0.71	C
13	0.31	A	0.41	A
14	0.53	A	0.62	B
15*	0.58	A	0.95	E
16	0.57	A	0.57	A
17	0.65	B	0.85	D
18	0.50	A	1.00	E
19	0.82	D	0.91	E
20	0.87	D	0.99	E
21	0.84	E	1.04	F
22	0.68	B	0.98	E
23	0.66	B	0.85	D
24	0.96	E	0.89	D
25	0.66	B	0.70	B
26	0.84	D	0.85	D

* Does not include effects of trains in intersection.

Source: Robert Conradt

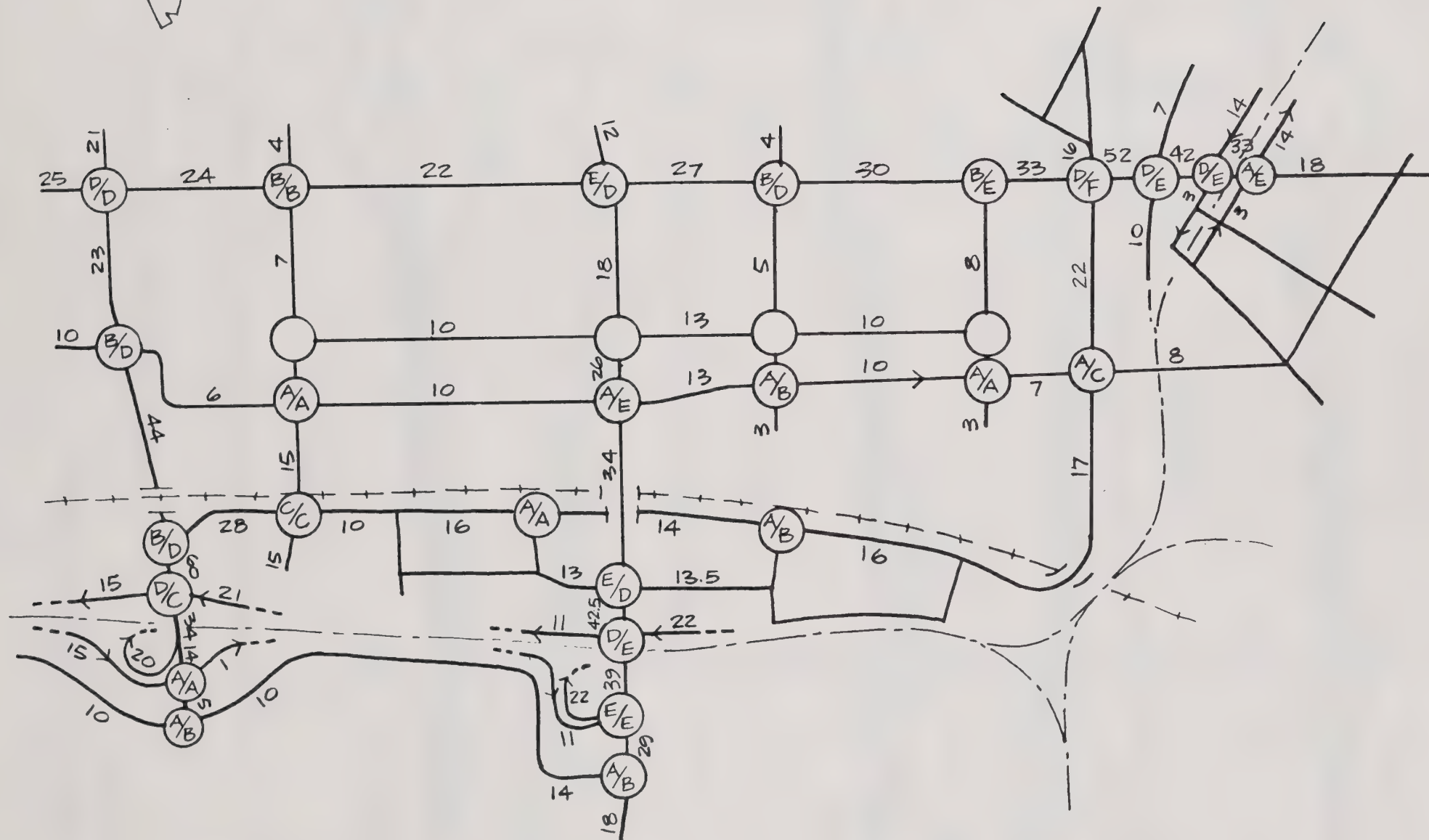


FIGURE 9

ESTIMATED FUTURE ADTS (IN 1000s) AND INTERSECTION LEVELS OF SERVICE (A.M./P.M.)

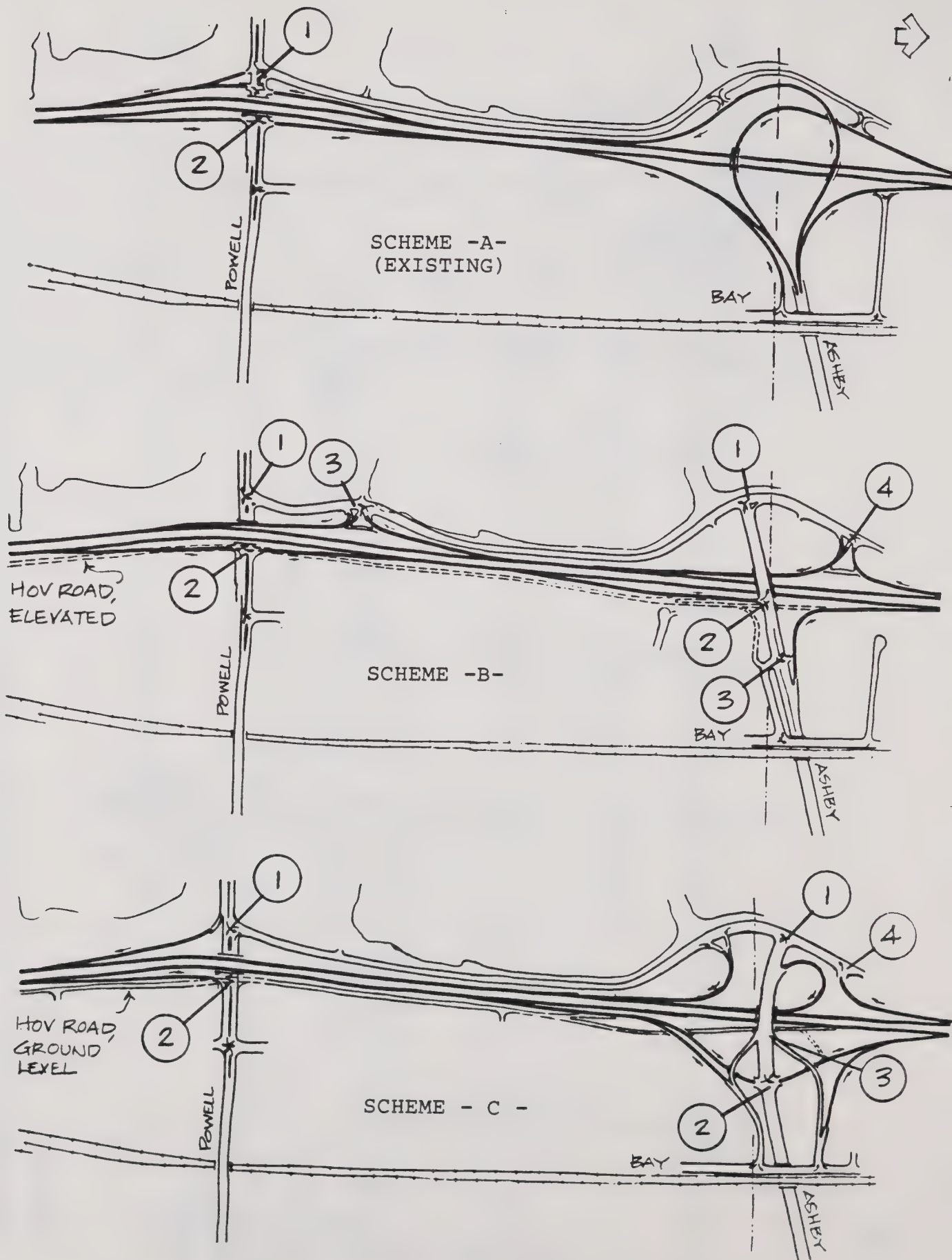


FIGURE 10a

ALTERNATIVE INTERCHANGE SCHEMES
AND INTERSECTION LOCATIONS

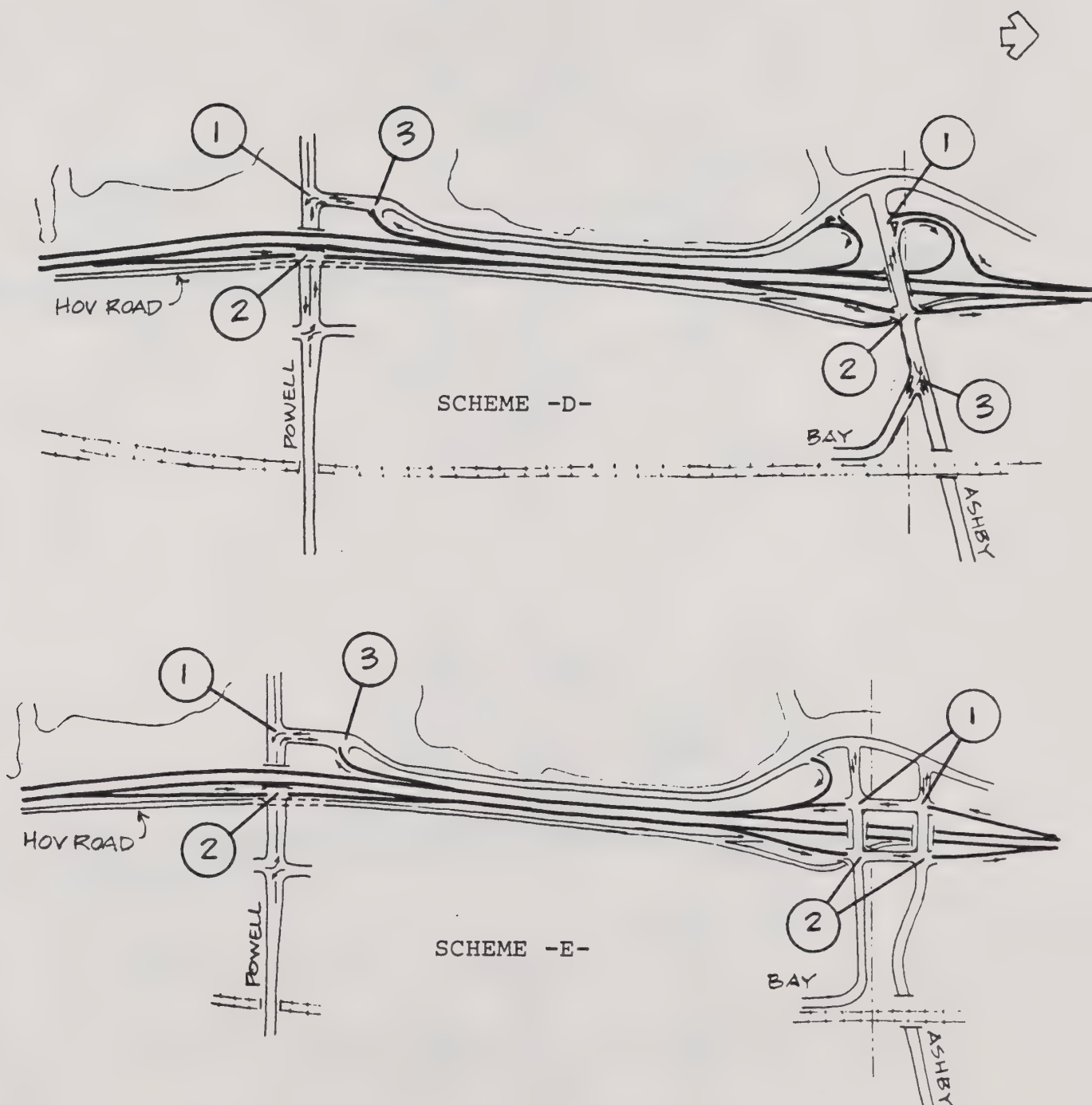


FIGURE 10b

ALTERNATIVE INTERCHANGE SCHEMES
AND INTERSECTION LOCATIONS

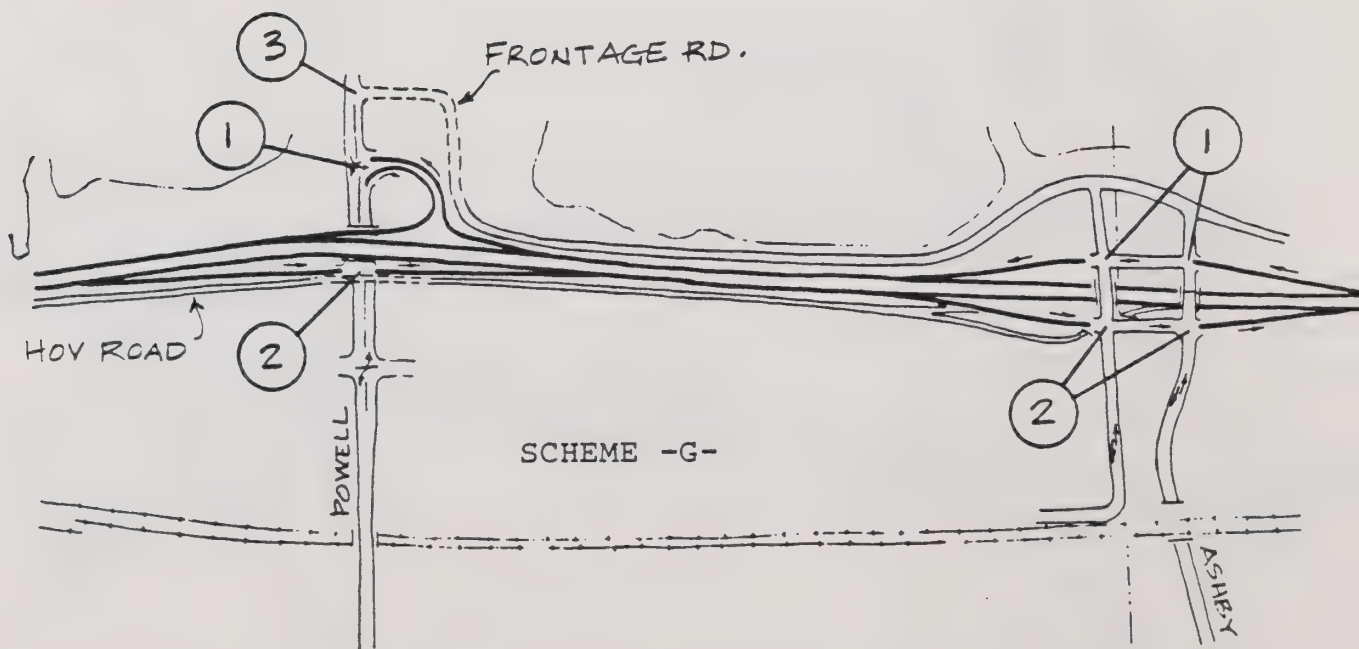
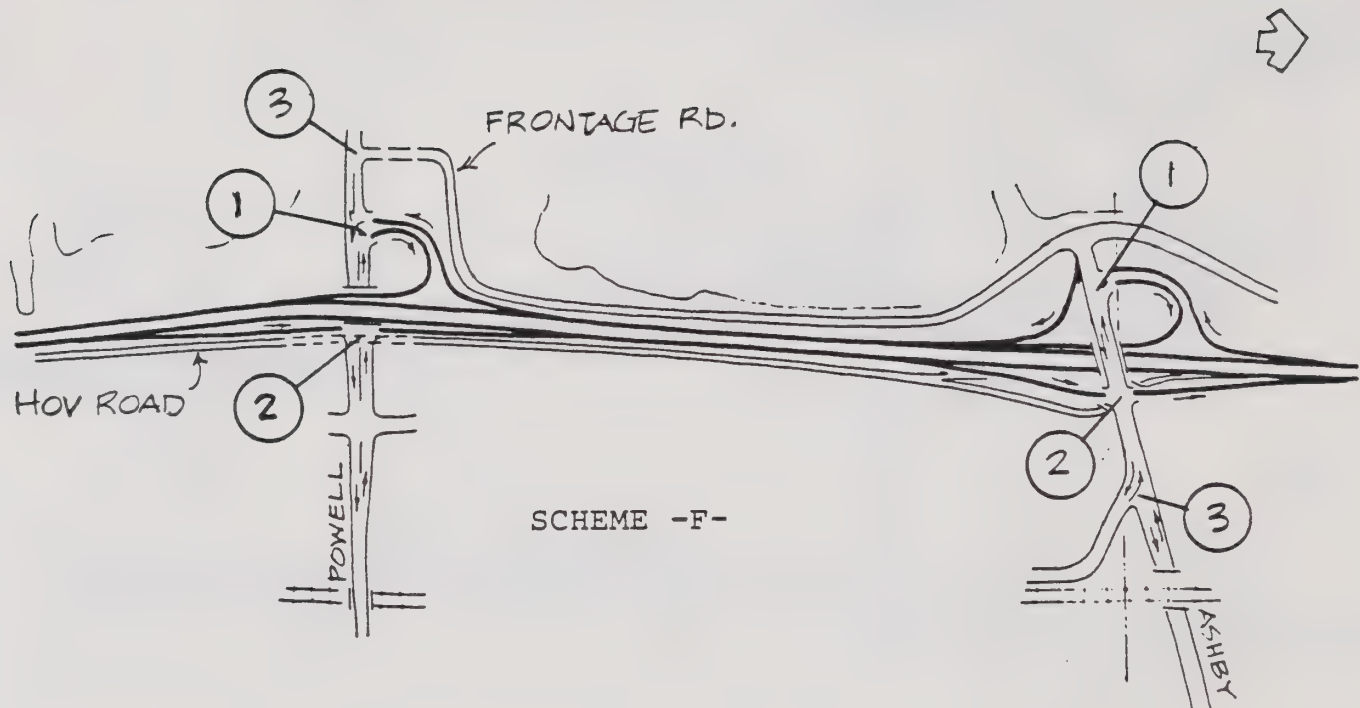


FIGURE 10c
ALTERNATIVE INTERCHANGE SCHEMES
AND INTERCHANGE LOCATIONS

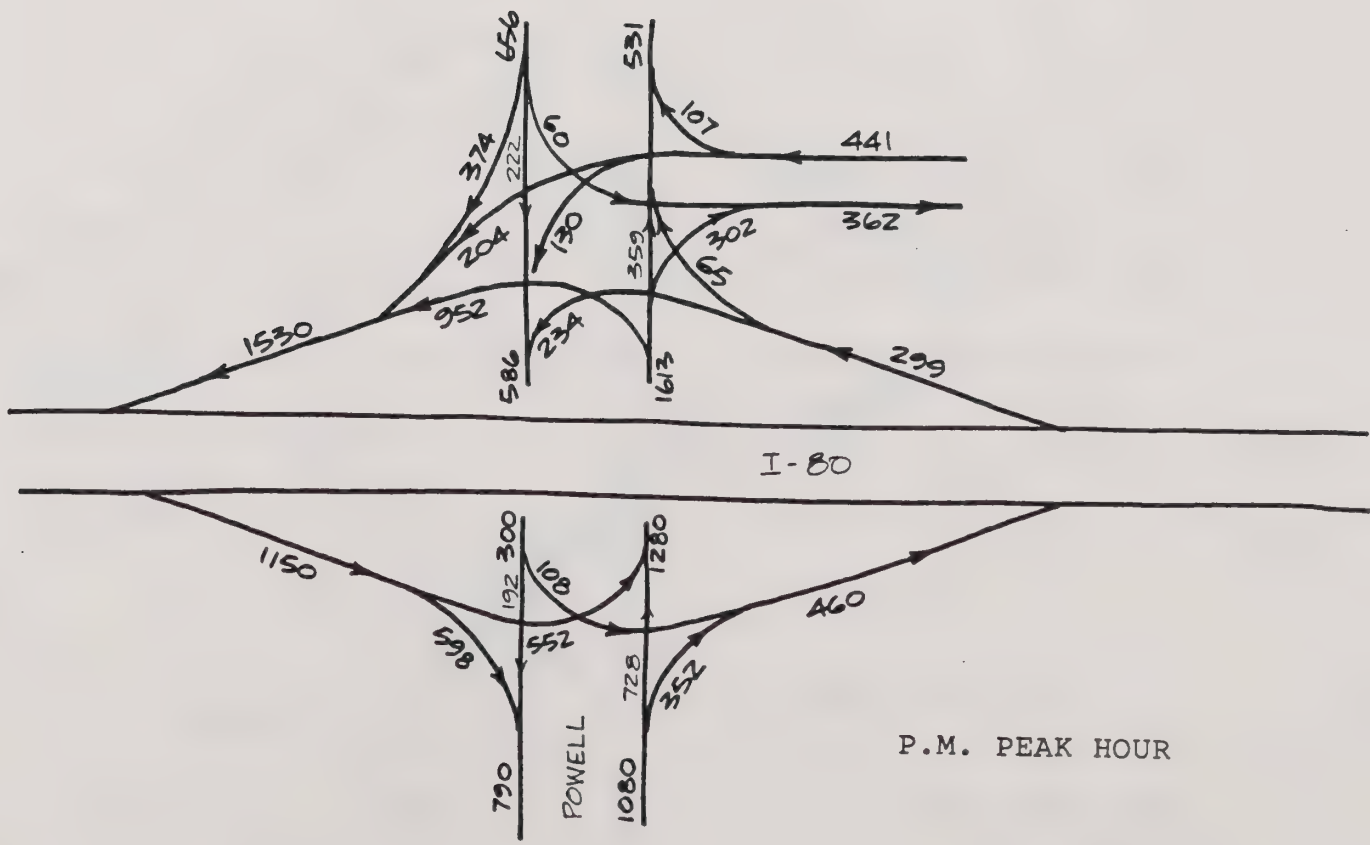
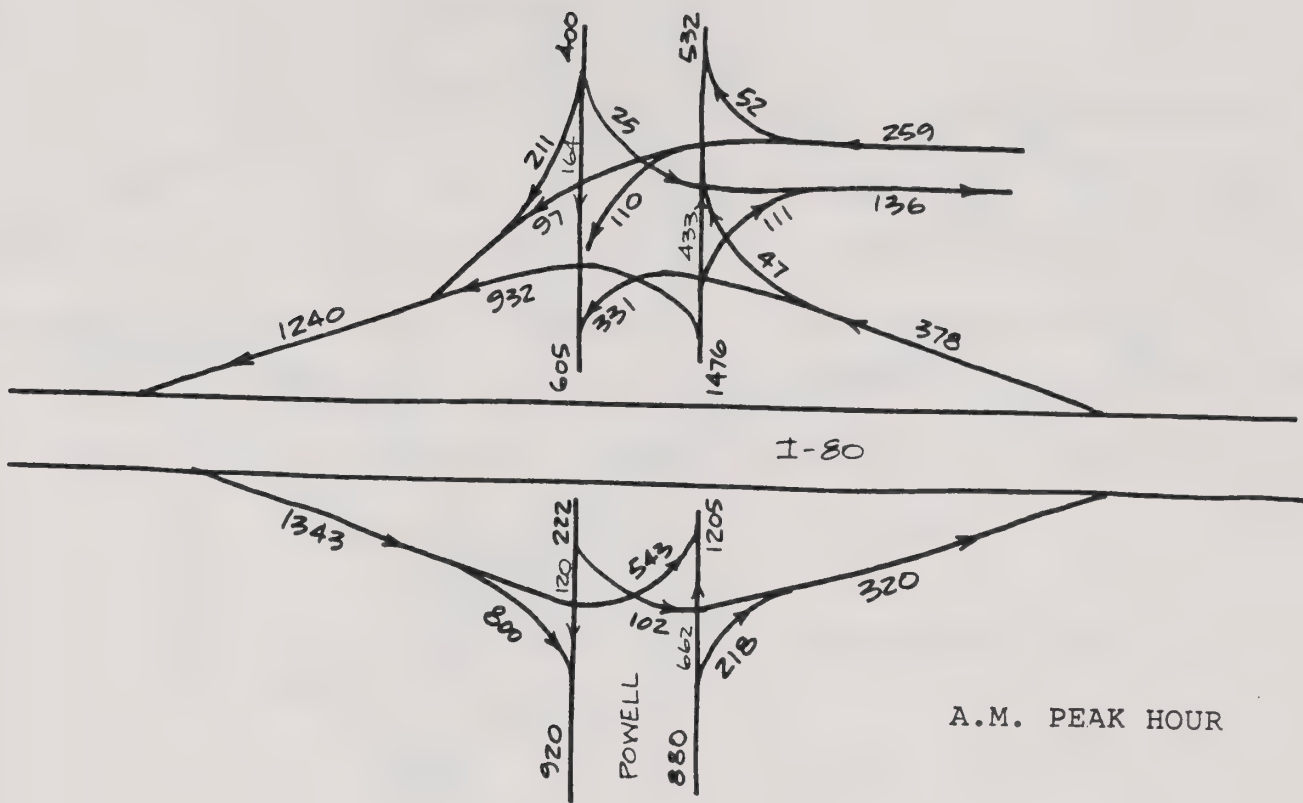


FIGURE 11a
EXISTING PEAK HOUR TRAFFIC VOLUMES
SCHEME -A-, POWELL STREET INTERCHANGE

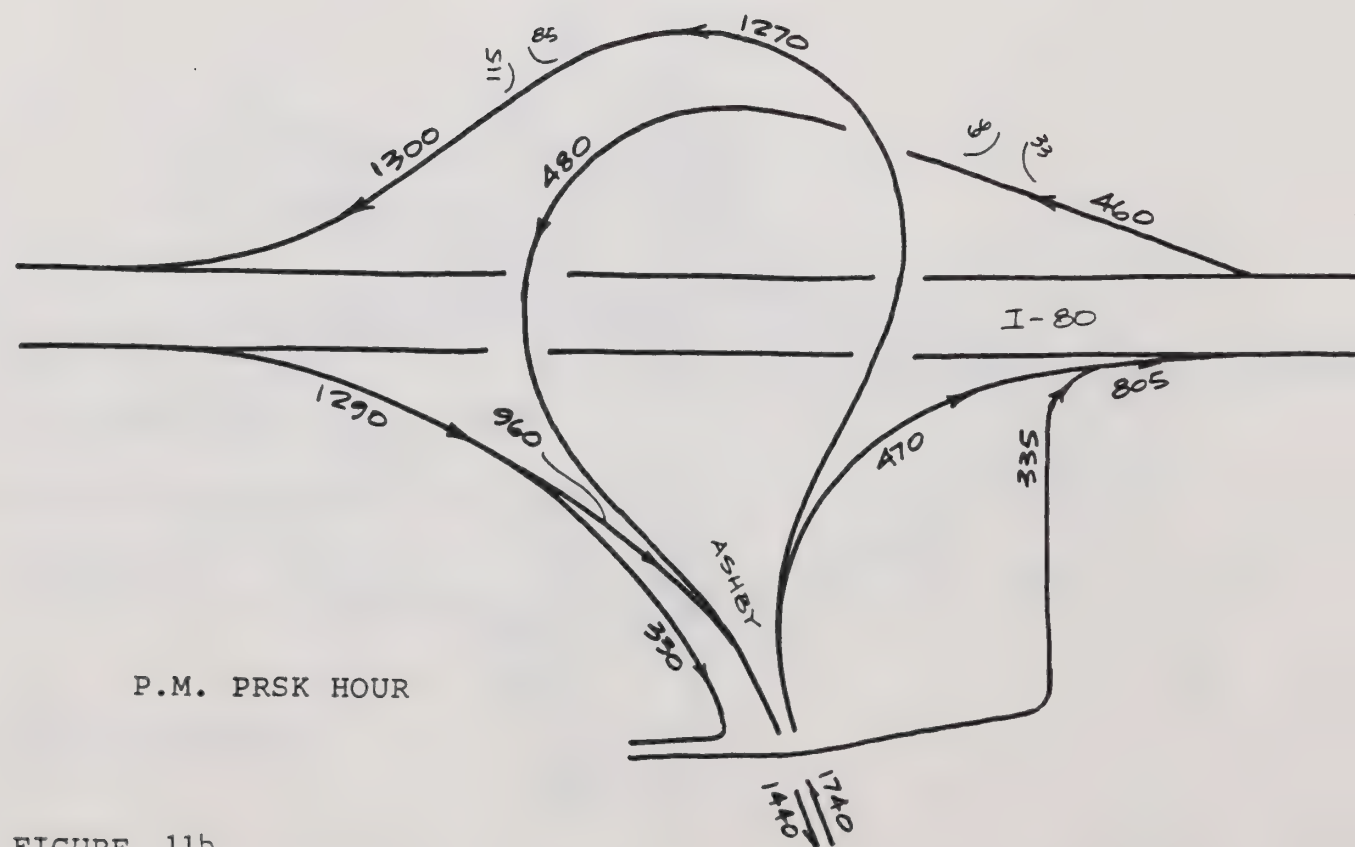
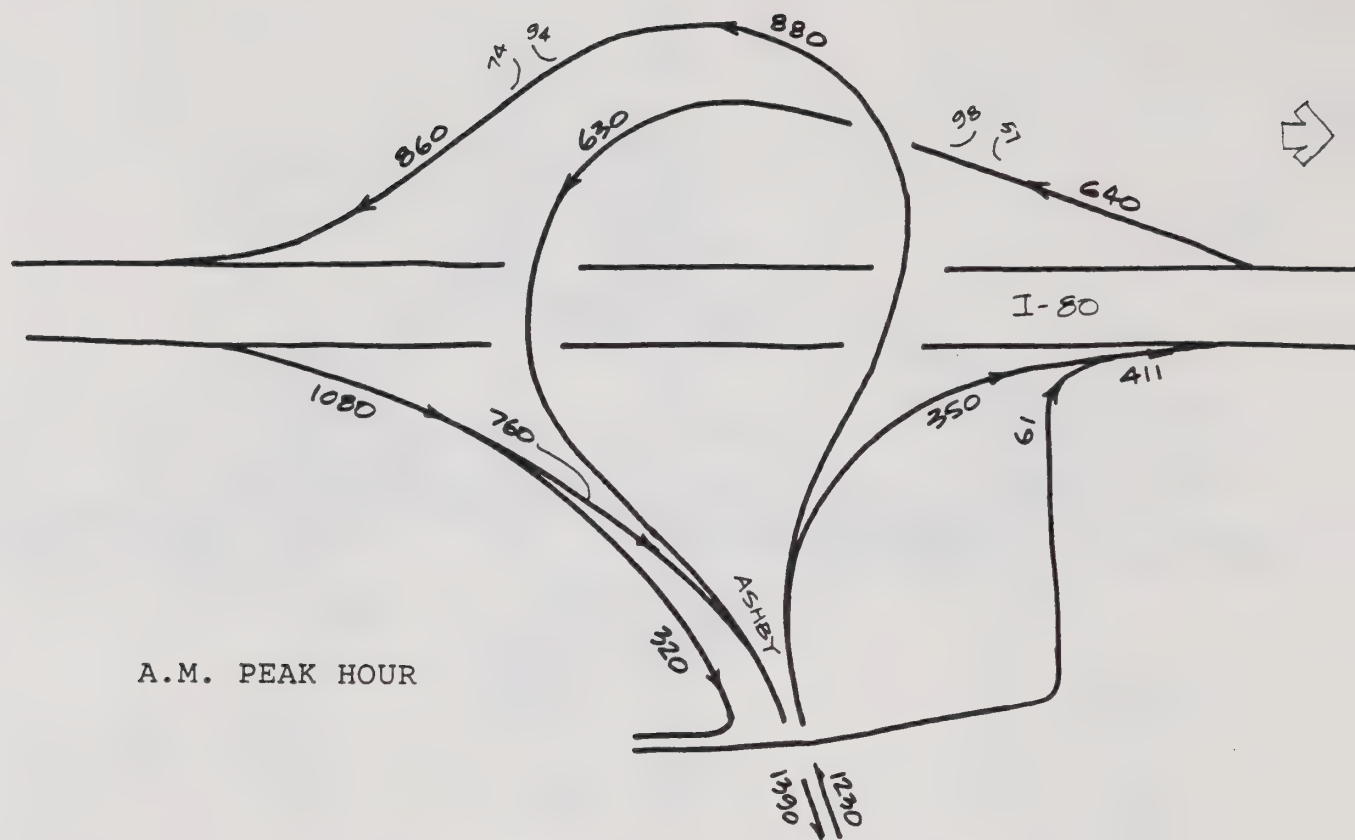


FIGURE 11b
 EXISTING PEAK HOUR TRAFFIC VOLUMES
 SCHEME -A-, ASHBY AVENUE INTERCHANGE

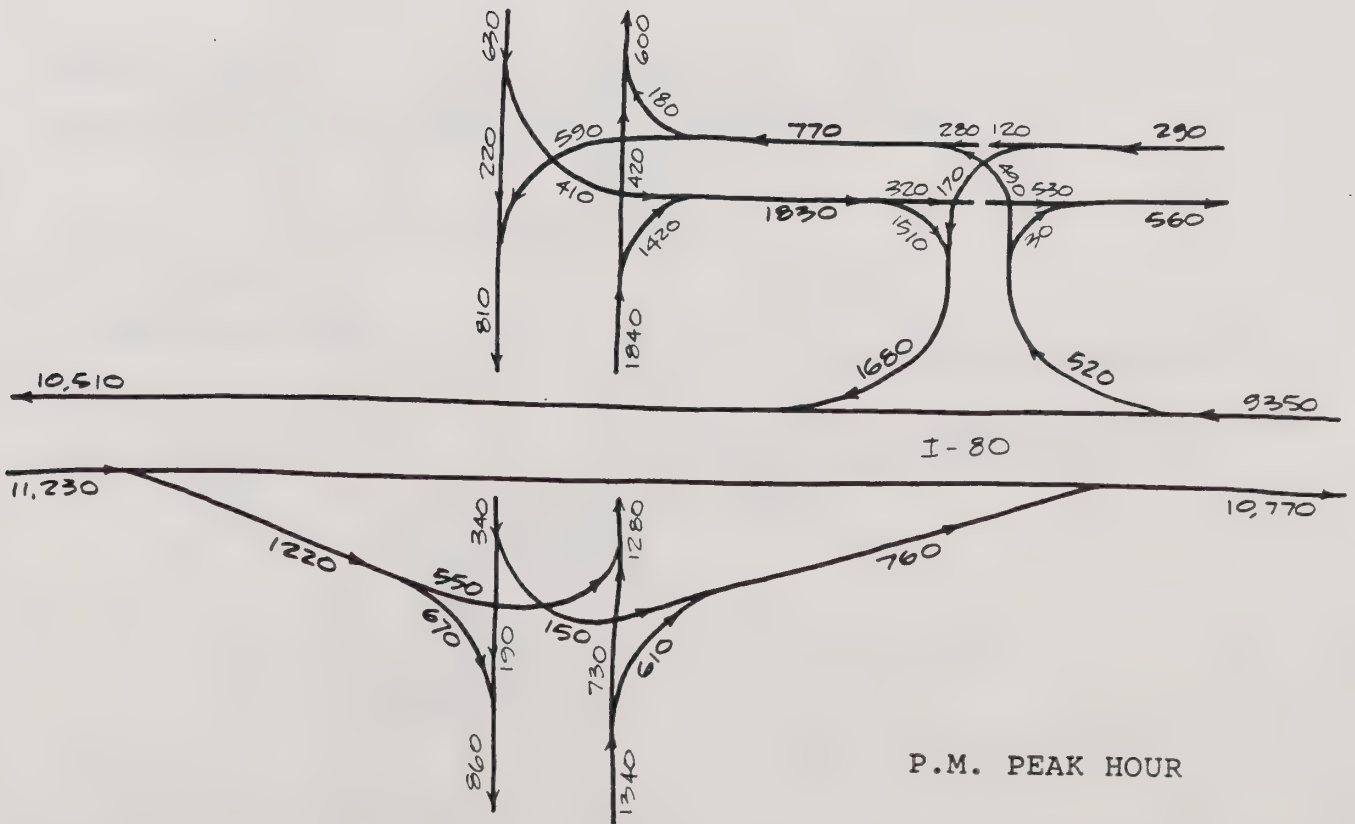
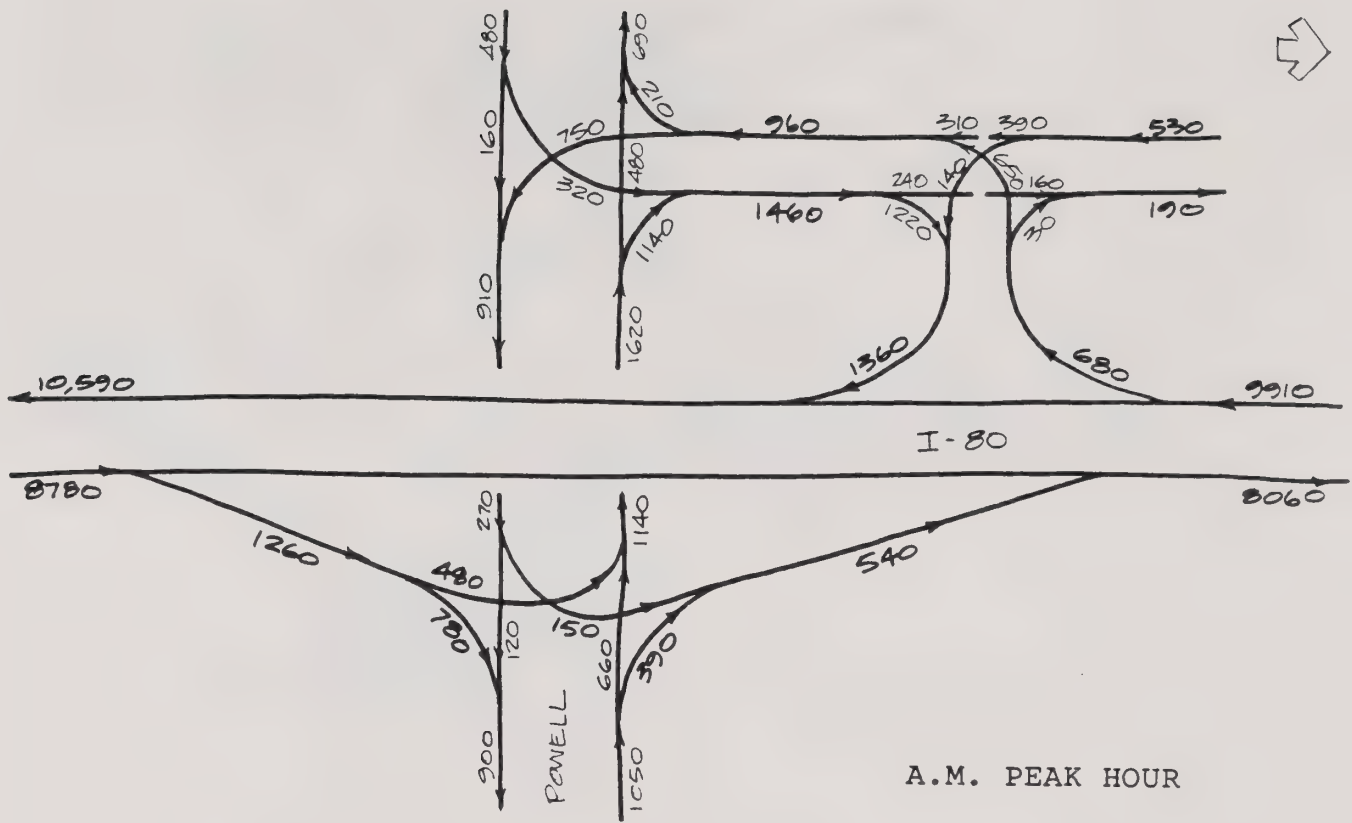


FIGURE 12a

2005 PEAK HOUR TRAFFIC, CALTRANS PROJECTION
SCHEME -B-, POWELL STREET INTERCHANGE

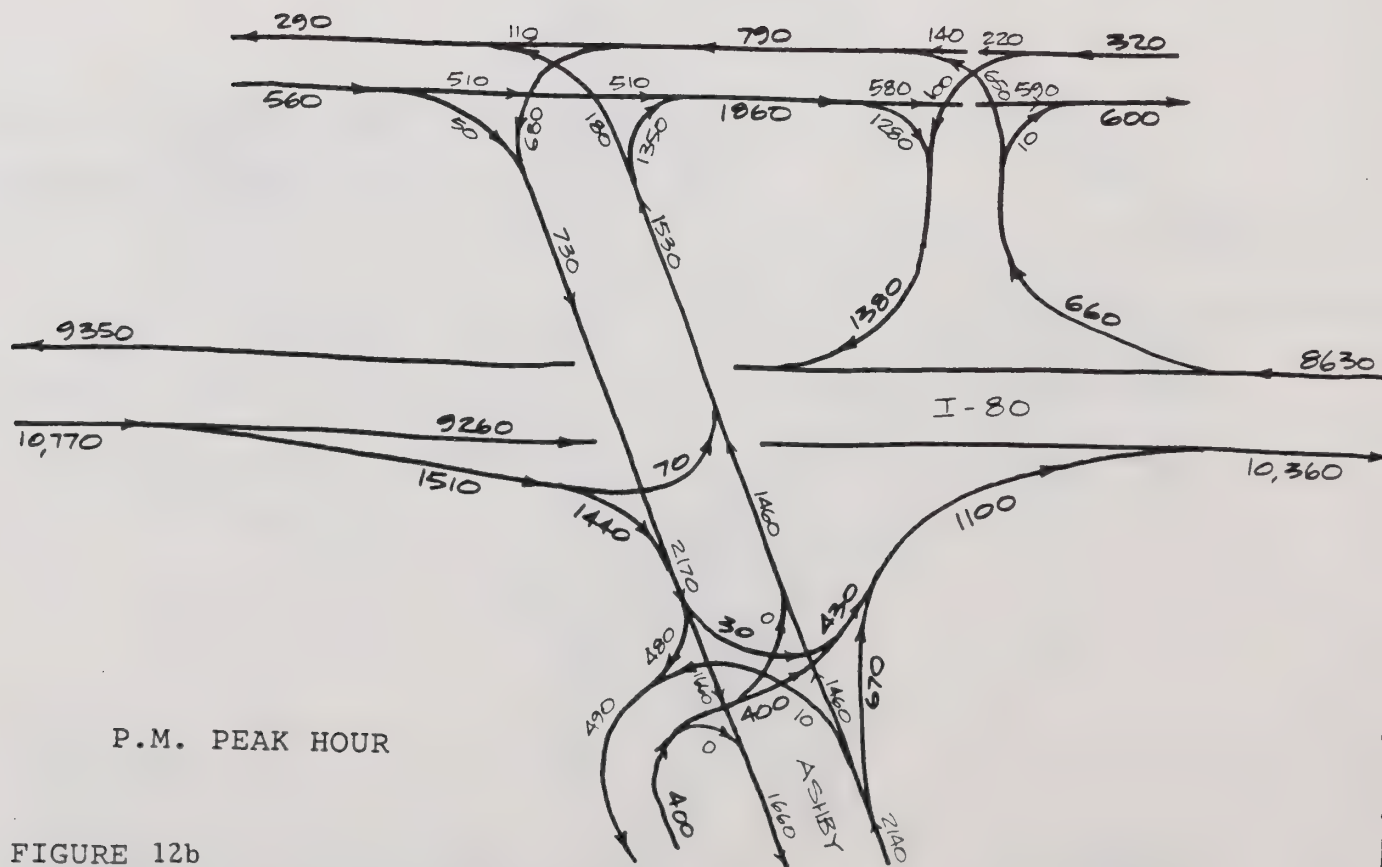
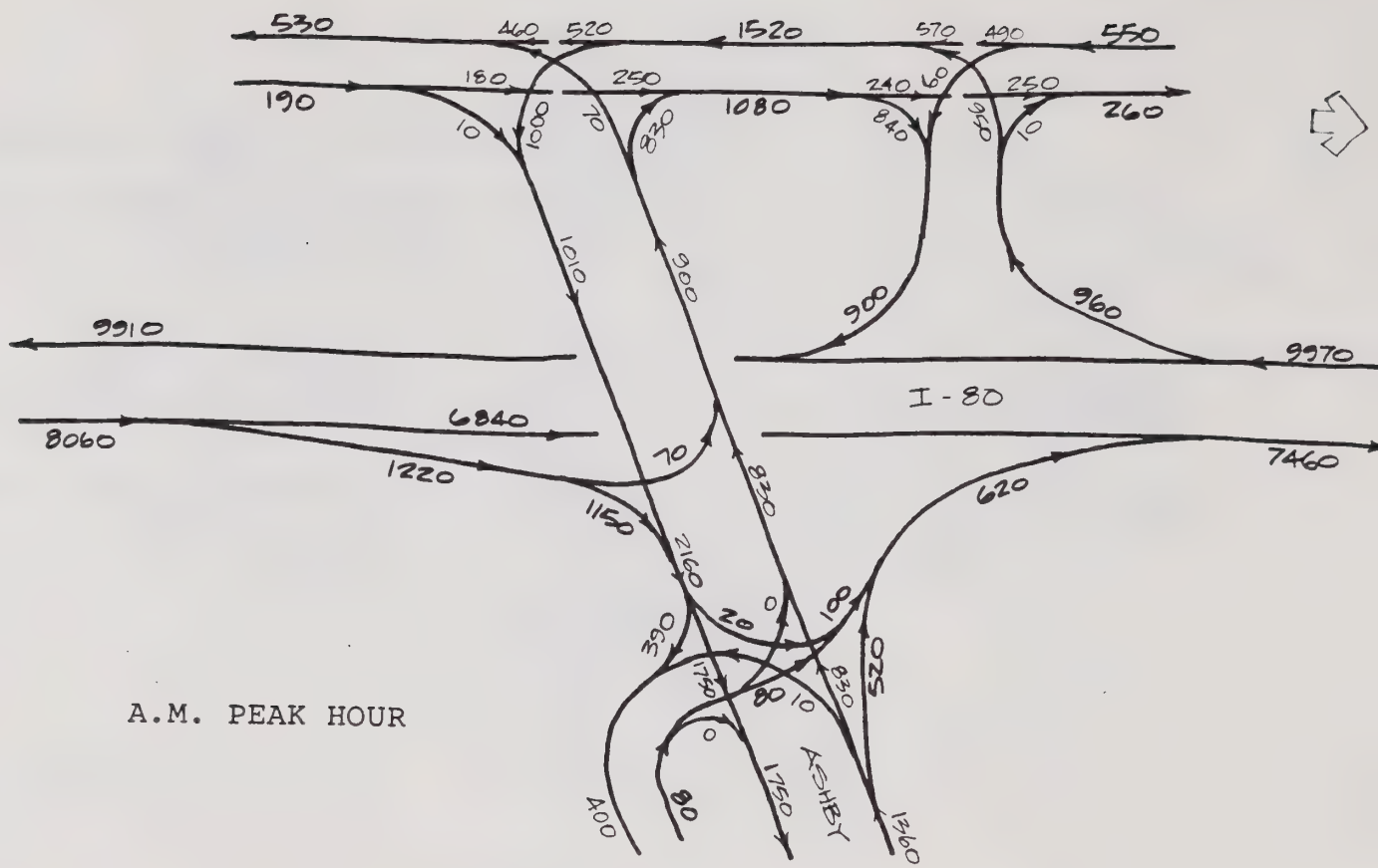


FIGURE 12b

2005 PEAK HOUR TRAFFIC, CALTRANS PROJECTION
SCHEME -B-, ASHBY AVENUE INTERCHANGE

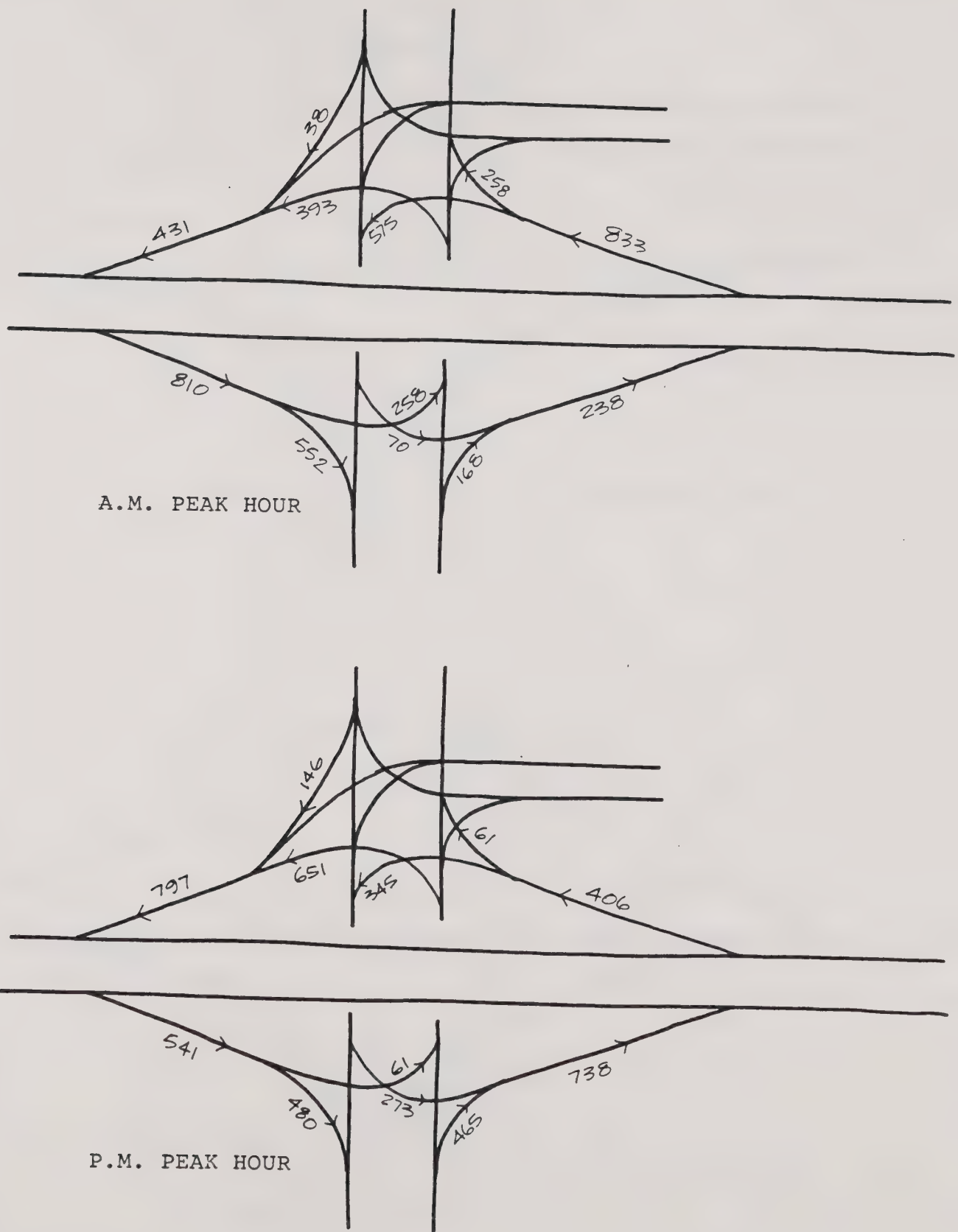
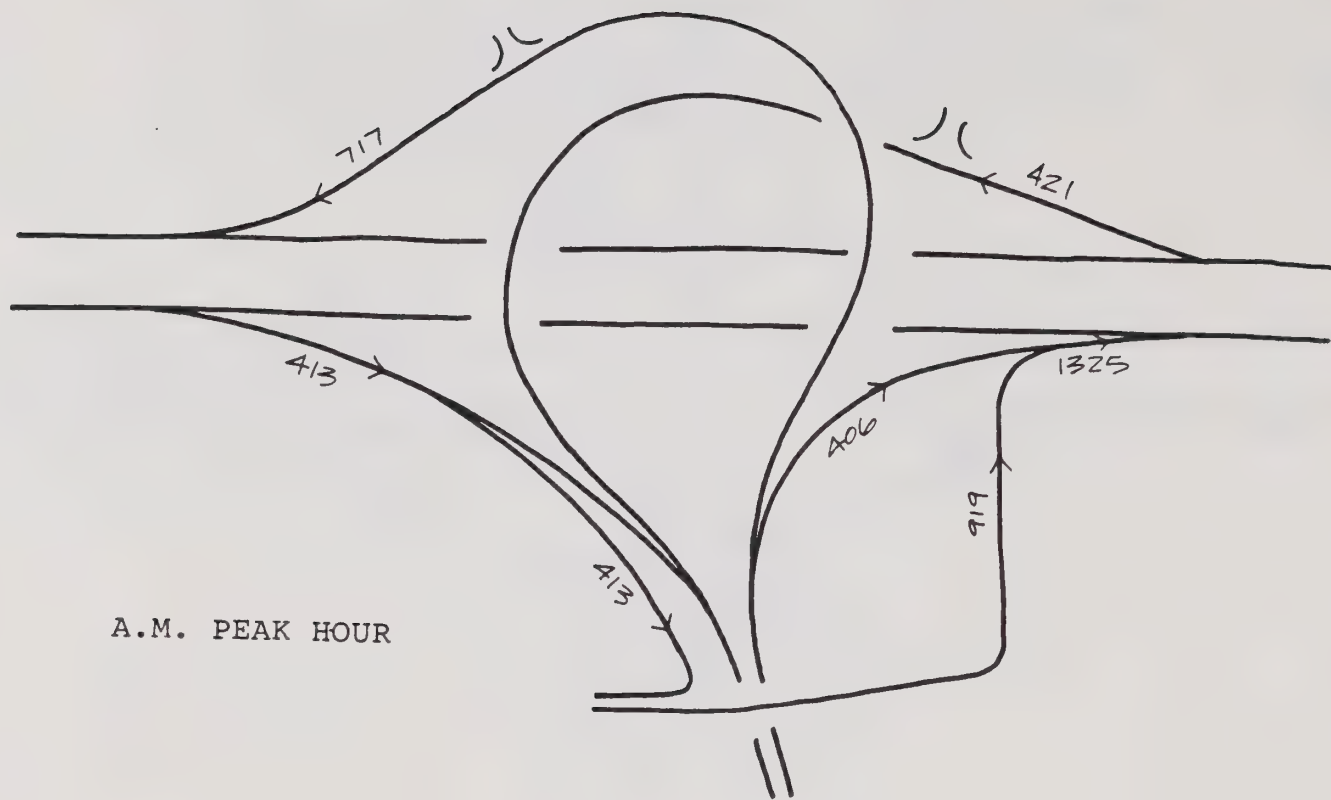
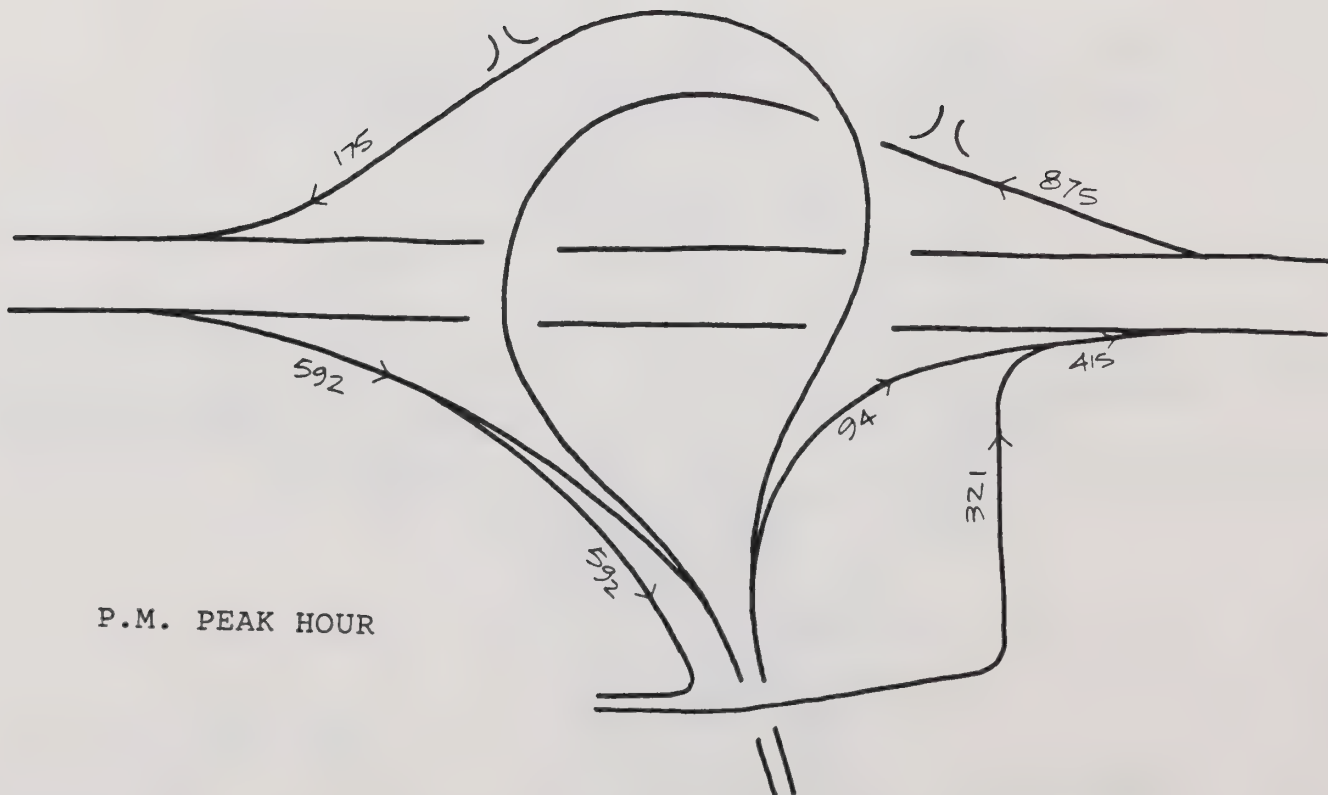


FIGURE 13a

PEAK HOUR TRAFFIC ADDED TO EXISTING BY PLAN A-2
SCHEME -A-, POWELL STREET INTERCHANGE



A.M. PEAK HOUR



P.M. PEAK HOUR

FIGURE 13b

PEAK HOUR TRAFFIC ADDED TO EXISTING BY PLAN A-2
SCHEME -A-, ASHBY AVENUE INTERCHANGE

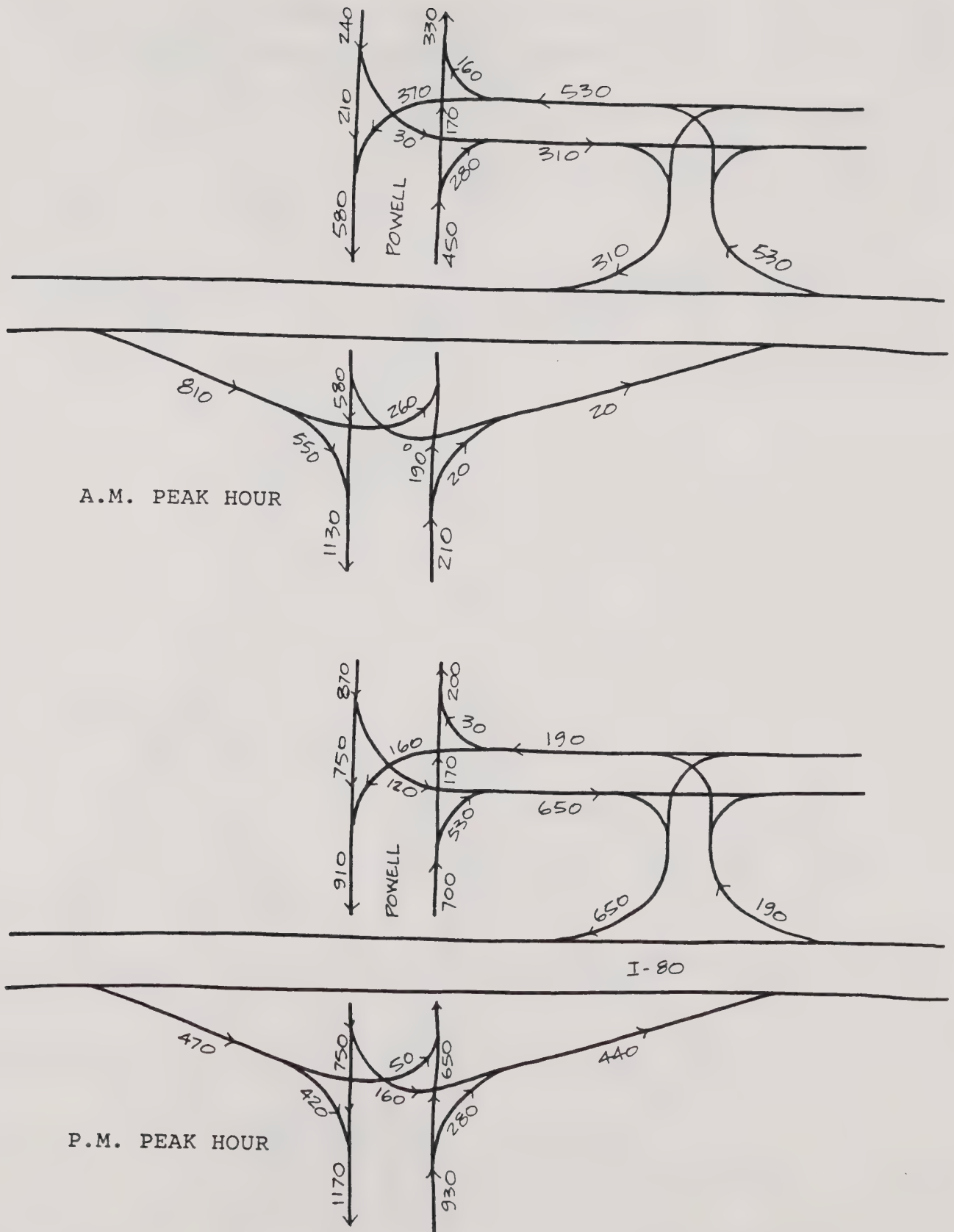
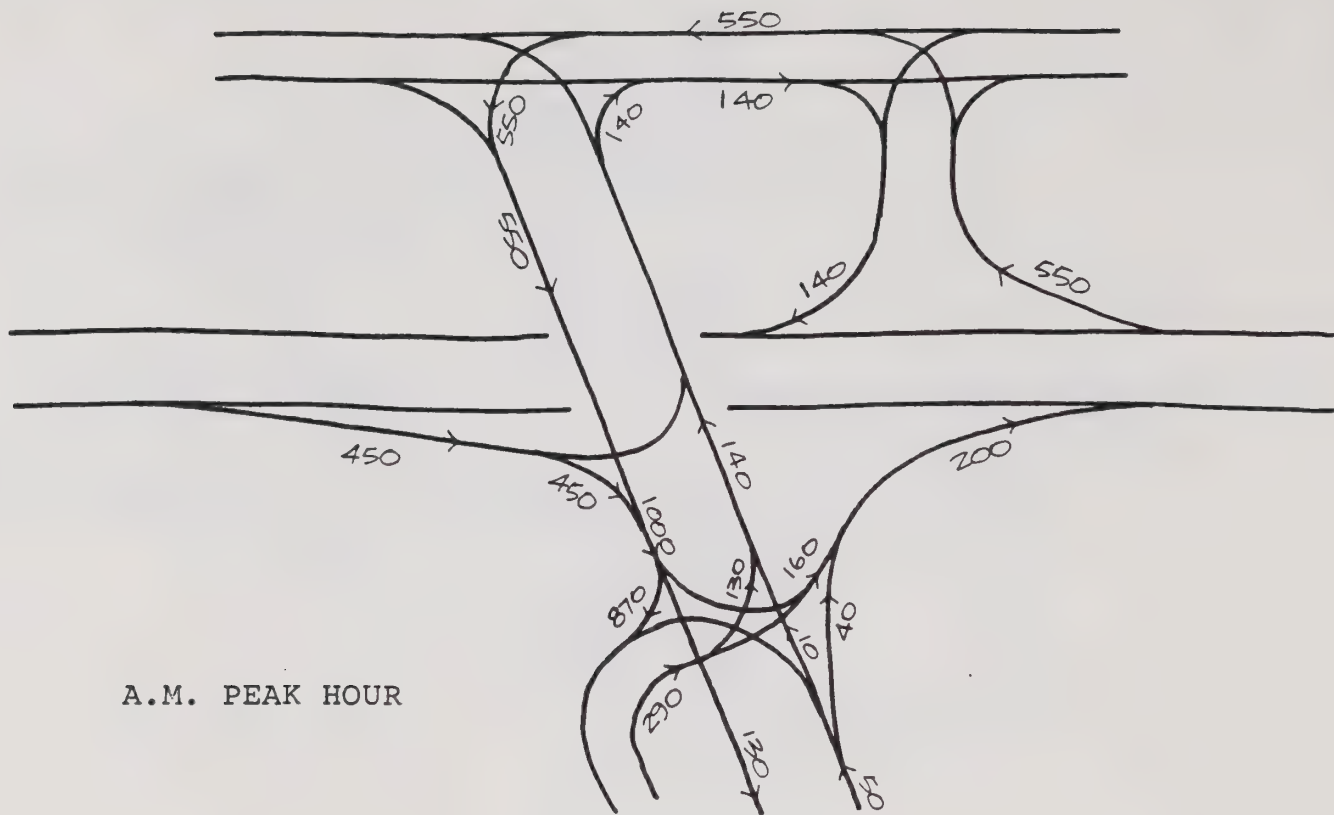
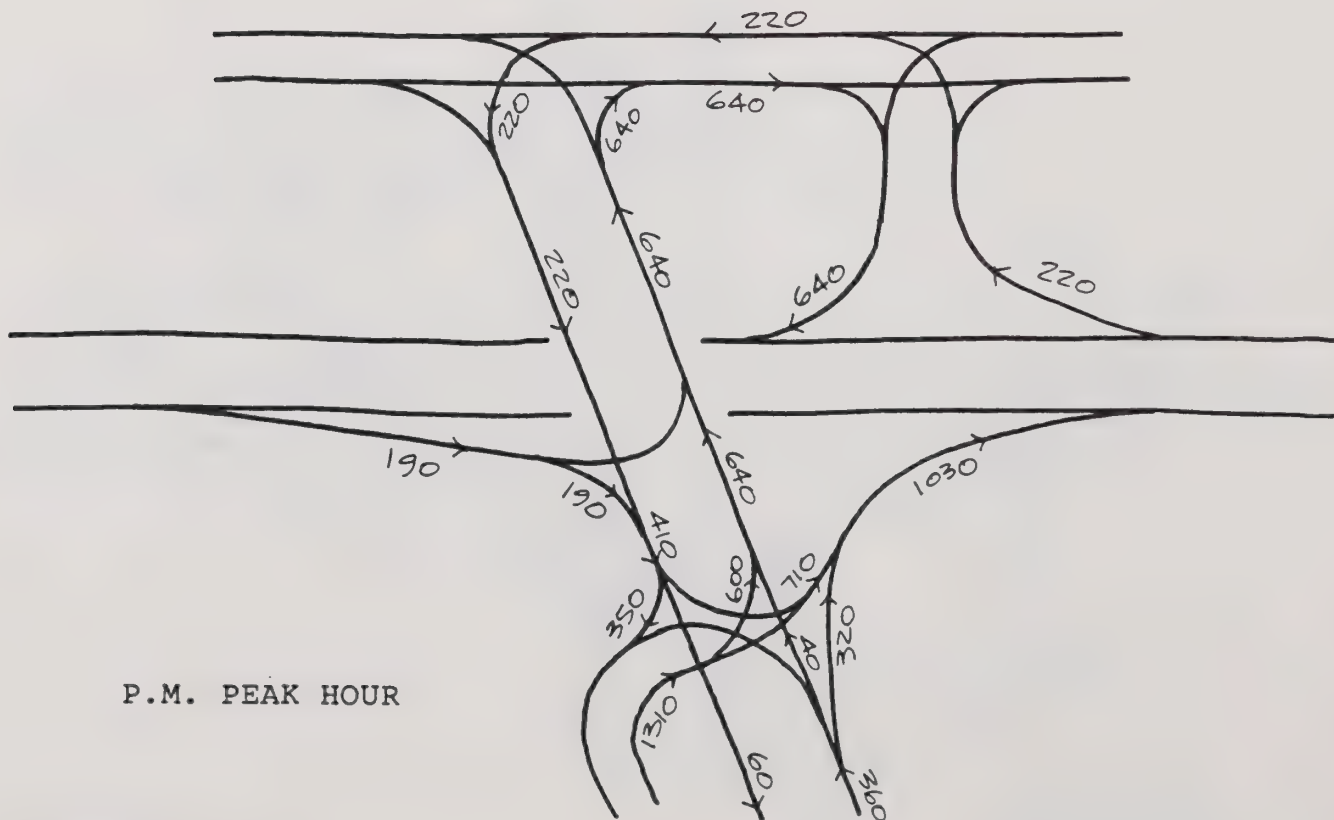


FIGURE 14a

PEAK HOUR TRAFFIC ADDED TO 2005 CALTRANS BY PLAN A-2
SCHEME -B-, POWELL STREET INTERCHANGE



A.M. PEAK HOUR



P.M. PEAK HOUR

FIGURE 14b

PEAK HOUR TRAFFIC ADDED TO 2005 CALTRANS BY PLAN A-2
SCHEME -B-, ASHBY AVENUE INTERCHANGE

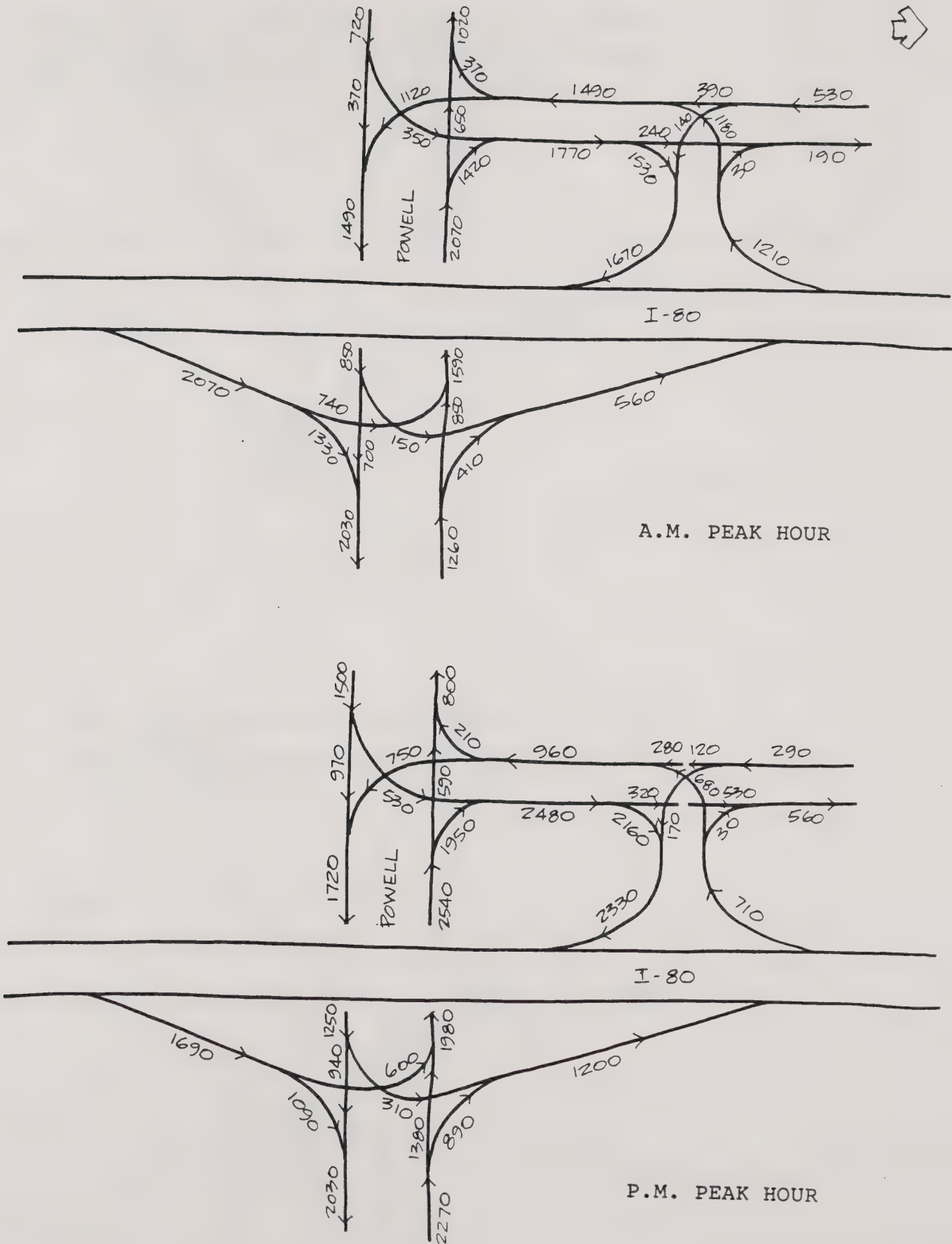


FIGURE 15a

2005 PEAK HOUR TRAFFIC, WITH A-2 DEVELOPMENT
SCHEME -B-, POWELL STREET INTERCHANGE

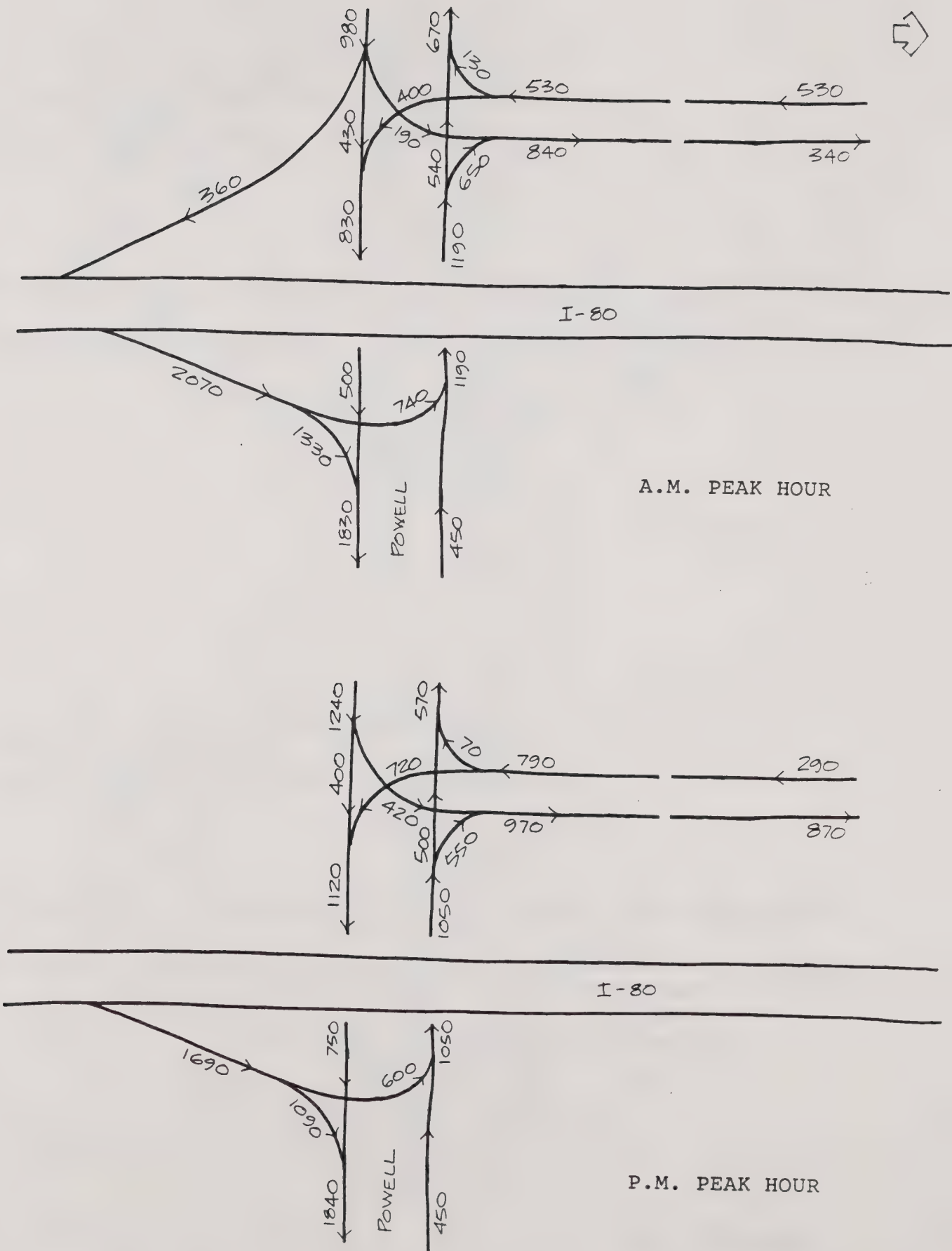


FIGURE 16

2005 PEAK HOUR TRAFFIC, WITH A-2 DEVELOPMENT
SCHEME -C-, POWELL STREET INTERCHANGE

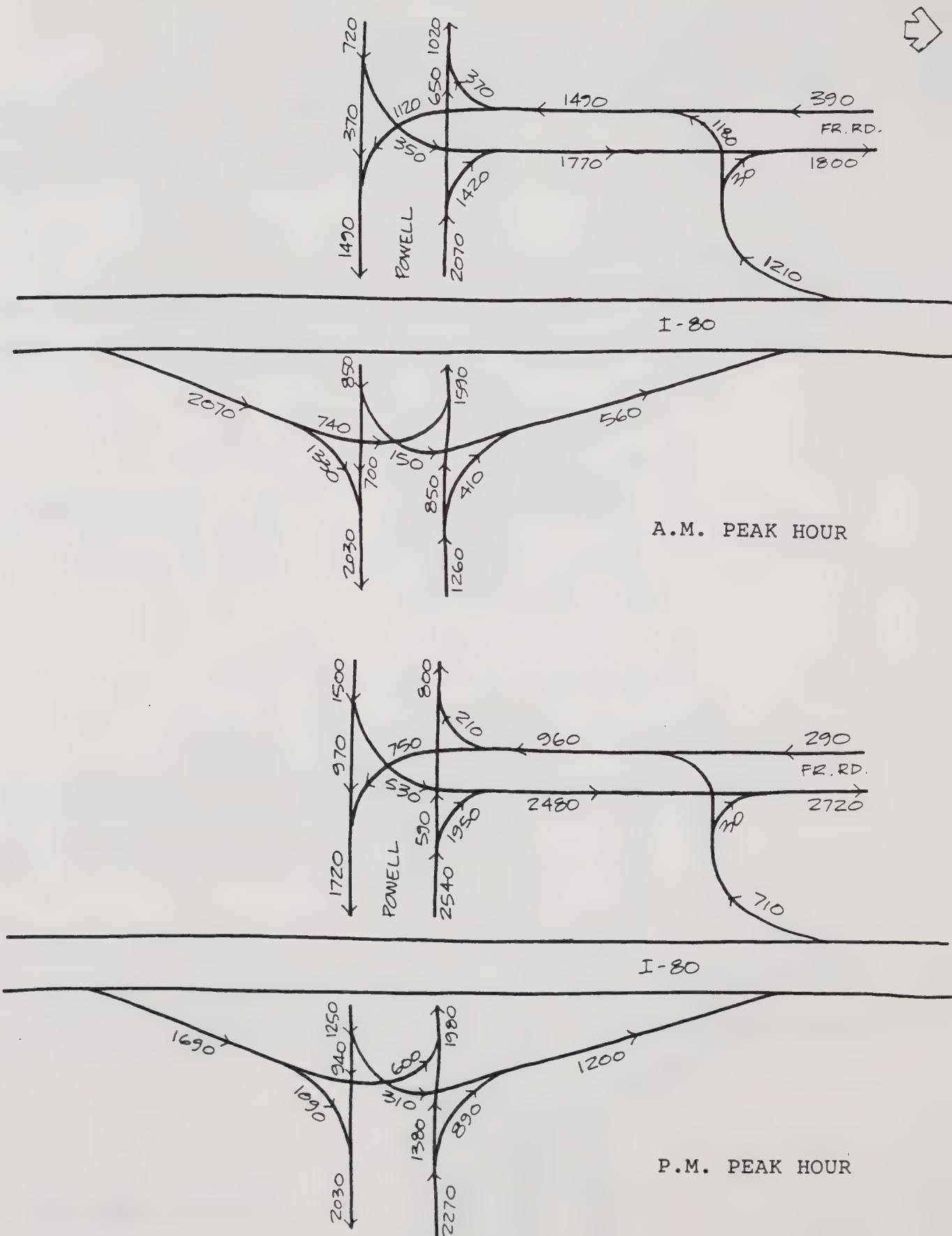


FIGURE 17

2005 PEAK HOUR TRAFFIC, WITH A-2 DEVELOPMENT SCHEMES -D AND E-, POWELL STREET INTERCHANGE

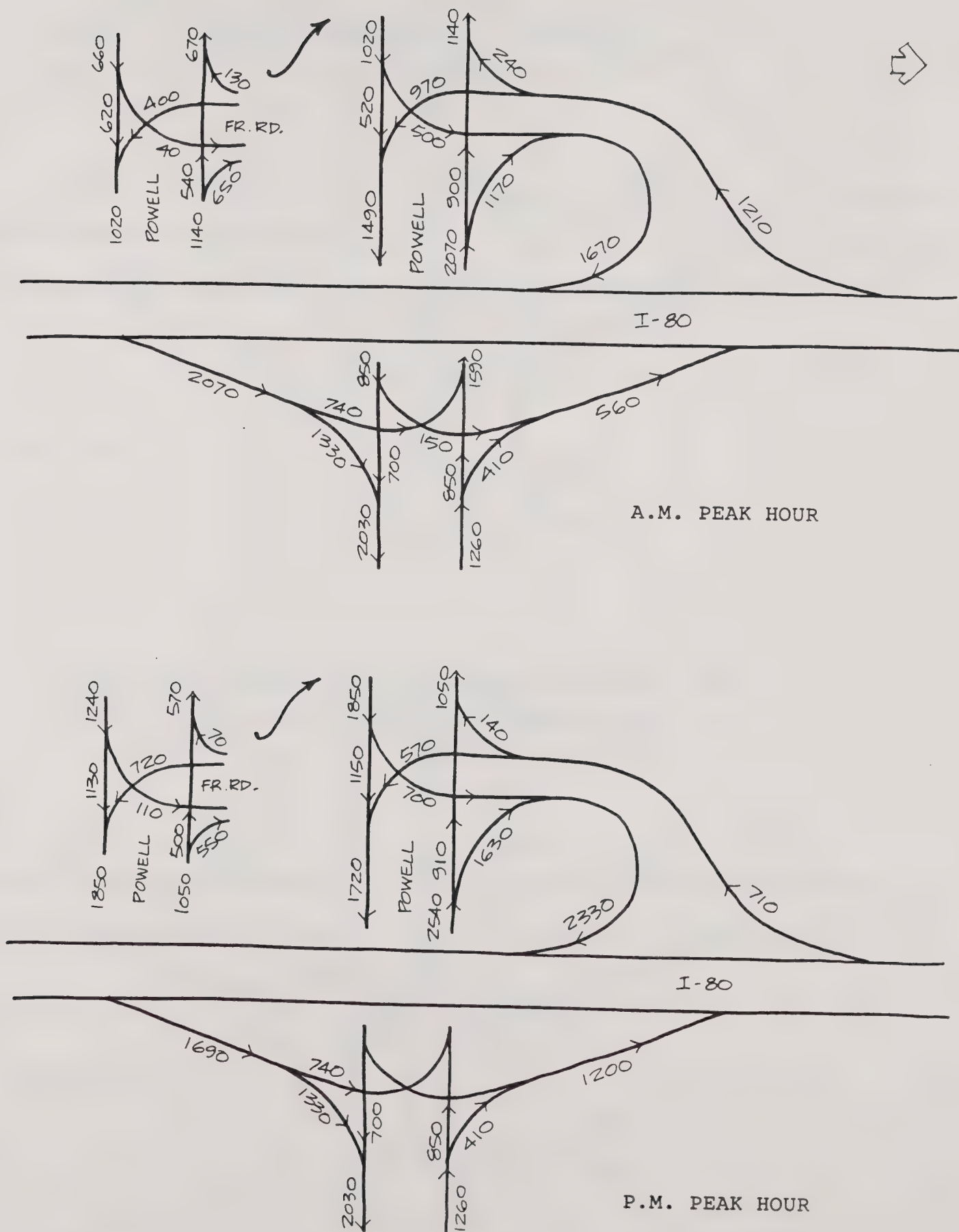


FIGURE 18

2005 PEAK HOUR TRAFFIC, WITH A-2 DEVELOPMENT
SCHEMES -F AND G-, POWELL STREET INTERCHANGE

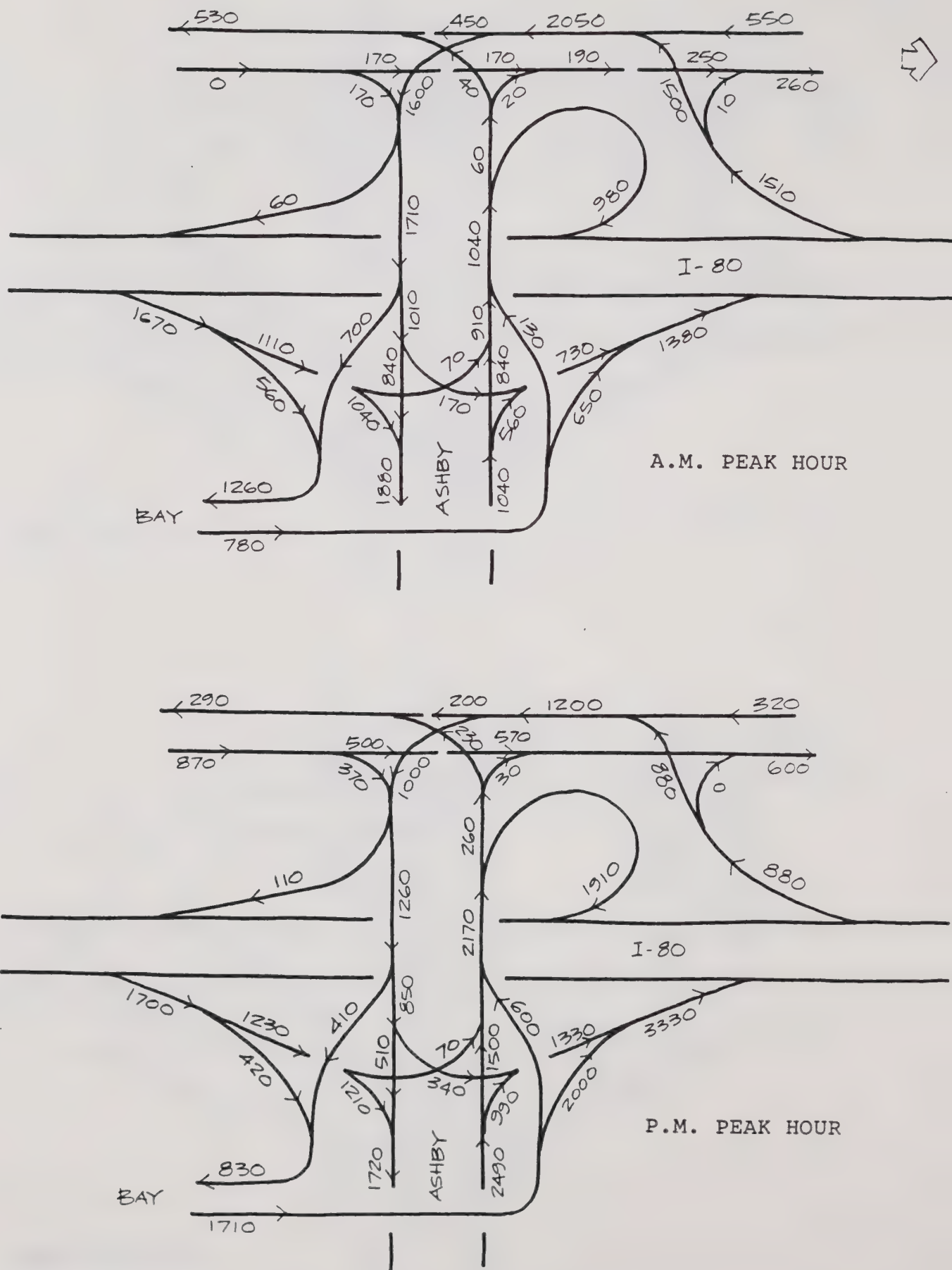


FIGURE 19

2005 PEAK HOUR TRAFFIC, WITH A-2 DEVELOPMENT
SCHEME -C-, ASHBY AVENUE INTERCHANGE

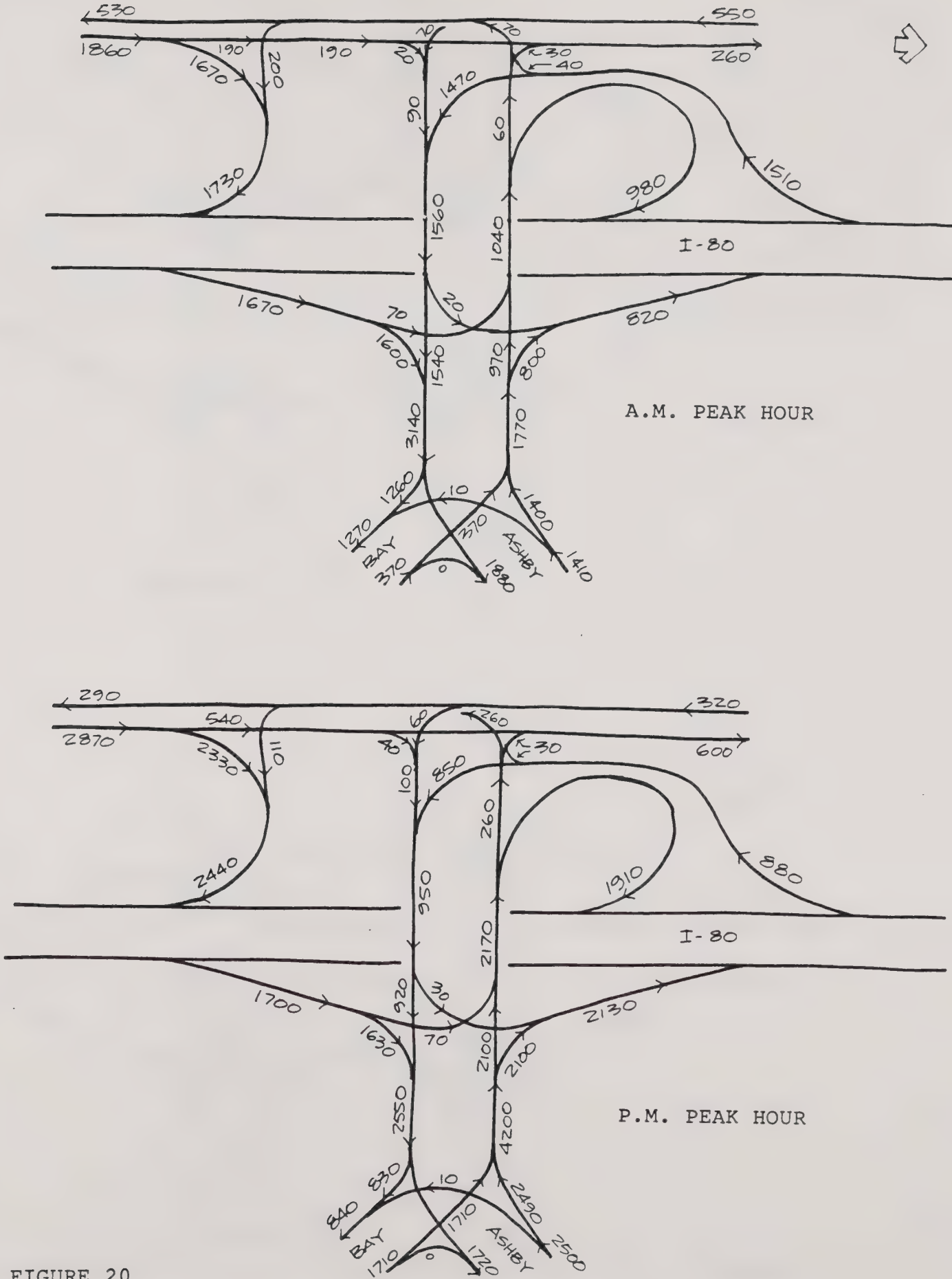


FIGURE 20

2005 PEAK HOUR TRAFFIC, WITH A-2 DEVELOPMENT
SCHEME -D-, ASHBY AVENUE

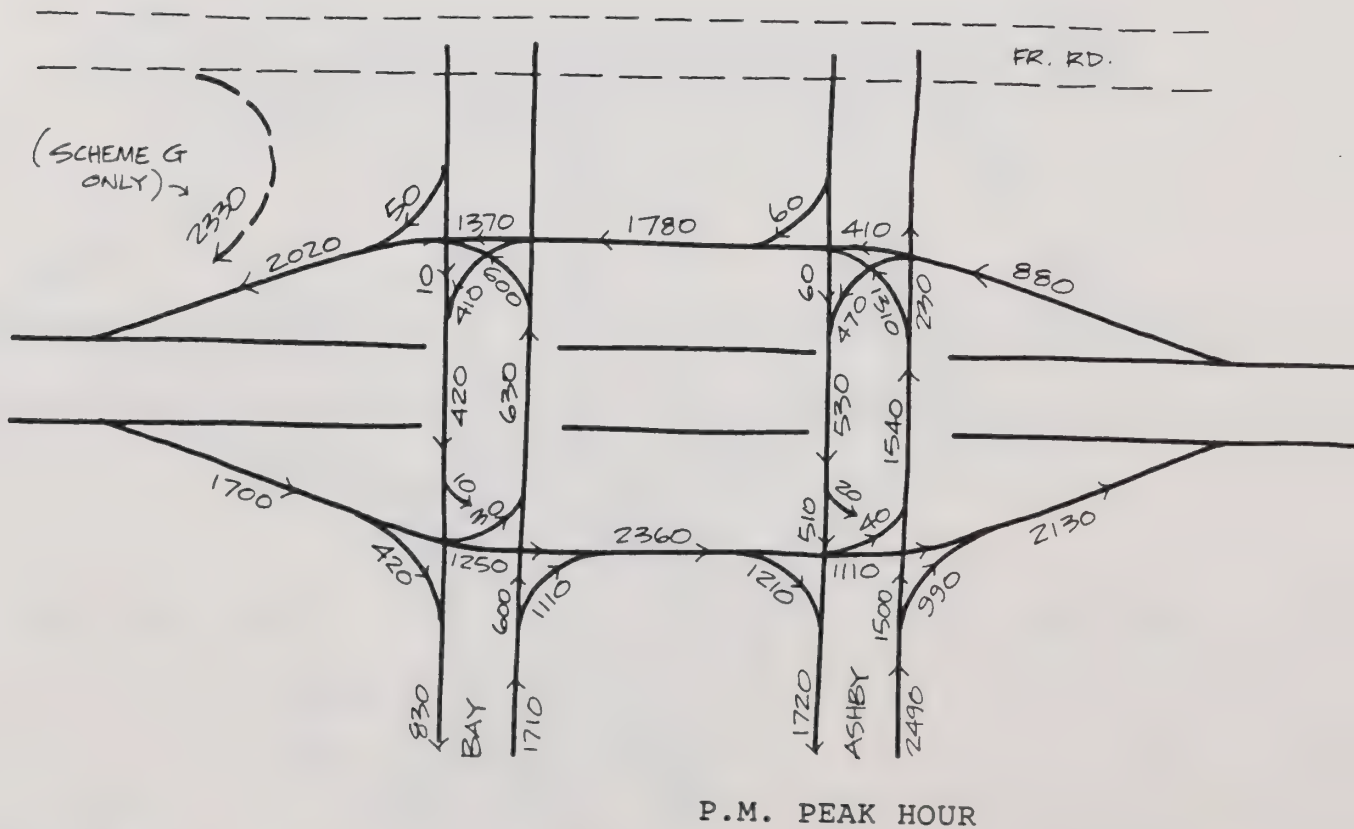
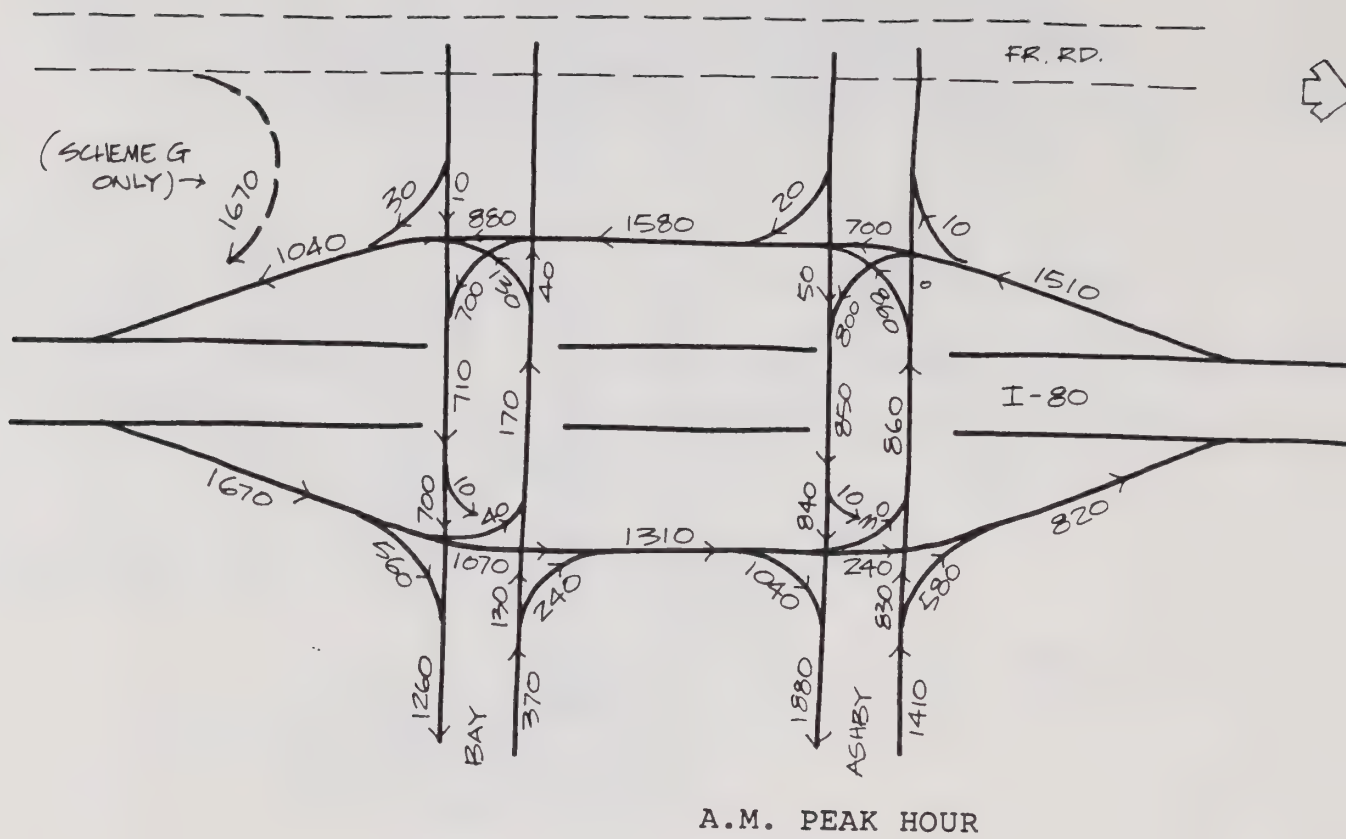


FIGURE 21

2005 PEAK HOUR TRAFFIC, WITH A-2 DEVELOPMENT
SCHEMES -E and G-, ASHBY AVENUE INTERCHANGE

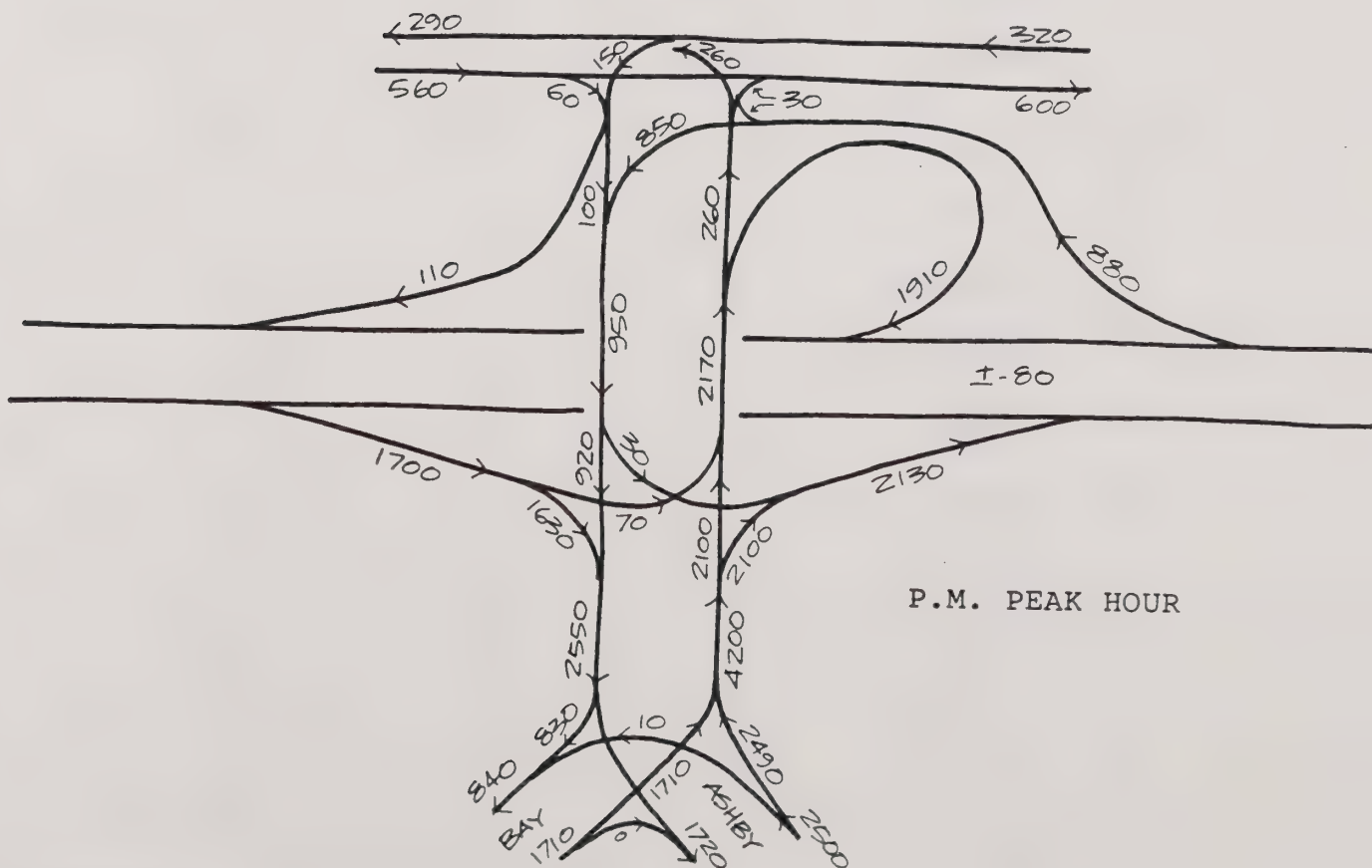
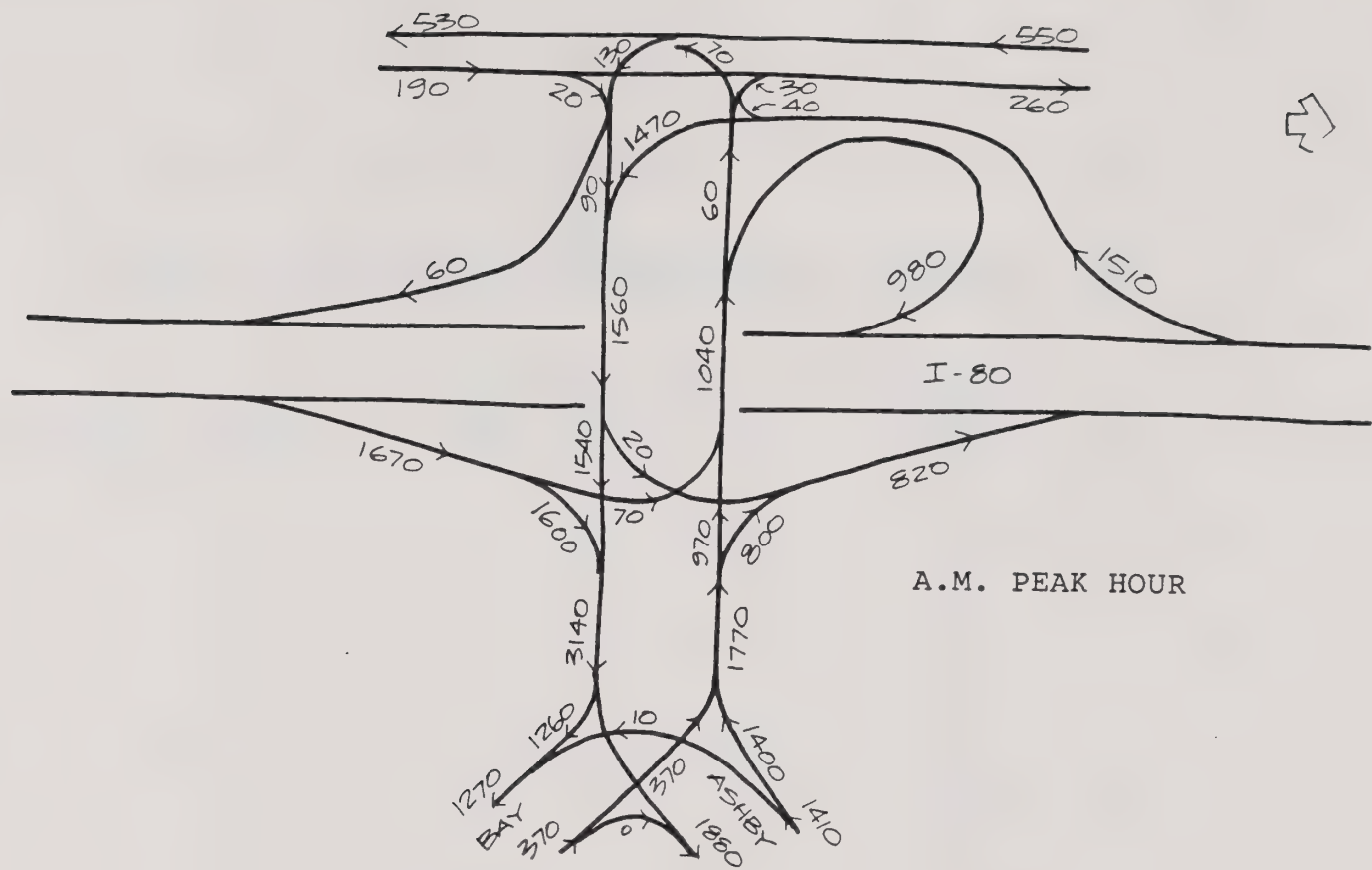


FIGURE 22

2005 PEAK HOUR TRAFFIC, WITH A-2 DEVELOPMENT
SCHEME -F-, ASHBY AVENUE INTERCHANGE

TABLE 6
V/C RATIOS FOR INTERSECTIONS IN ALTERNATIVE SCHEMES

Scheme	Traffic Volumes	V/C Ratios by Intersection Number						
		Powell Street Interchange			Ashby Avenue Interchange			
		<u>1</u>	<u>2</u>	<u>3</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
<u>A.M. Peak Hour</u>								
A	Exist.	1.03	1.03	--	--	--	--	--
B	2005 Caltrans	.97	.78	.91	1.09	.74	.83	.84
C	2005 With A-2	1.18	1.19	1.11	1.53	1.08	1.30	1.29
D	2005 With A-2	.50	.77	--	.91	.53	.29	.67
E	2005 With A-2	.80	.86	.79	.69	.61	--	--
F	2005 With A-2	.91	.86	.46	.52	.88	.66	--
G	2005	.91	.86	.46	.52	.88	.66	--
<u>P.M. Peak Hour</u>								
A	Exist.	1.06	1.06	--	--	--	--	--
B	2005 Caltrans	1.22	.88	1.12	.98	.99	1.06	.95
B	2005 With A-2	1.65	1.43	1.55	1.14	1.28	1.71	1.11
C	2005 With A-2	.83	.74	--	.88	.55	.73	.69
D	2005 With A-2	.91	.96	.78	.37	.98	.87	--
E	2005 With A-2	.91	.96	.78	.94	.88	--	--
F	2005 With A-2	.97	.77	.66	.37	.98	.87	--
G	2005 With A-2	.97	.77	.66	.97	.88	--	--

TABLE 7

LEVELS OF SERVICE FOR INTERSECTIONS IN ALTERNATIVE SCHEMES

Scheme	Traffic Volumes	L.O.S. by Intersection Number							
		Powell Street Interchange			Ashby Avenue Interchange				
		<u>1</u>	<u>2</u>	<u>3</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	
<u>A.M. Peak Hour</u>									
A	Exist.	F	F	--	--	--	--	--	--
B	2005 Caltrans	D-E	A-C	D-E	F	A-C	D-E	D-E	
B	2005 With A-2	F	F	F	F	F	F	F	
C	2005 With A-2	A-C	A-C	--	D-E	A-C	A-C	A-C	
D	2005 With A-2	D-E	D-E	A-C	A-C	D-E	A-C	--	
E	2005 With A-2	D-E	D-E	A-C	A-C	A-C	--	--	
F	2005 With A-2	D-E	D-E	A-C	A-C	D-E	A-C	--	
G	2005 With A-2	D-E	D-E	A-C	A-C	A-C	--	--	
<u>P.M. Peak Hour</u>									
A	Exist.	F	F	--	--	--	--	--	
B	2005 Caltrans	F	D-E	F	D-E	D-E	F	D-E	
B	2005 With A-2	F	F	F	F	F	F	F	
C	2005 With A-2	D-E	A-C	--	D-E	A-C	A-C	A-C	
D	2005 With A-2	D-E	D-E	A-C	A-C	D-E	D-E	--	
E	2005 With A-2	D-E	D-E	A-C	D-E	D-E	--	--	
F	2005 With A-2	D-E	A-C	A-C	A-C	D-E	D-E	--	
G	2005 With A-2	D-E	A-C	A-C	D-E	D-E	--	--	

APPENDIX C: EXISTING AND PROPOSED LAND USE INVENTORY

For purposes of the traffic analysis, the City was divided into 31 zones, as shown in Figure 2 of Appendix B (Traffic Analysis). For purposes of the land use inventory and analysis, each of these zones was divided into subareas based on use and development potential. Three maps were consulted in determining developability:

- Land Utilization, or the ratio of the value of improvements to the value of the land (see Figure III-13);
- Land Use Plan, which illustrates policies governing the overall use and development of land in the City (see Figure III-14); and
- Building Intensity (see Figure III-15).

The inventory is presented in tabular form and identifies for each subarea the existing land use and the proposed land uses. Subareas are defined by a "Group" number and a "Block" letter. Existing condition data include land use, number of employees, and number of dwelling units (categorized as single family dwellings, 2-4 units, and 5 or more units). A land use intensity was assigned to the land area of each non-residential subarea to derive the developable square footage for that subarea. The results are shown in the far right column under the heading "Total Area." The land use intensity factor is the Floor Area Ratio (FAR), or the ratio of the built floor area to the land area. For each type of non-residential use, an employment density (number of square feet per employee) was assumed based on experience elsewhere. The density figure multiplied by the developable square footage for a given use yields the number of employees anticipated to occupy that space. Residential development densities in terms of dwelling units per acre were also assigned. The inventory presents both the total future employment and housing units at buildout as well as the net change from existing conditions.

The key at the end of the inventory explains the land use abbreviations used and indicates the employment and residential density assumptions.

EMERYVILLE DEVELOPMENT ALTERNATIVES IMPACTS

		EXISTING							PROPOSALS				IMPACTS				
GRP	BLK	AREA (SF)	EXIST.	NO.	DWELLING UNITS			PROP	USE	SQ FT/	DU/	PROP	NET CH	TOTAL	NET CH	TOTAL	
			USE/AC		EMPL	TOTAL	SFD										2-4
1	A1	64,000	GIMF	27	0				GIMF	0.5	450		71	44	0	0	32,000
1	A2	64,000	GIMF	27	0				GIWL	0.5	700		46	19	0	0	32,000
1	B	7,750	GIWL	13	0				NC				13	0	0	0	0
1	C	34,400	GIMF	100	0				NC				100	0	0	0	0
1	D	9,900	GIMF	140	0				NC				140	0	0	0	
1	E1	28,500	GIMF	69	0				GIMF	0.5	450		32	(37)	0	0	14,250
1	E2	28,500	GIMF	70	0				GIWL	0.5	700		20	(49)	0	0	14,250
1	F	45,000	GIMF	160	0				GIMH	0.5	365		62	(98)	0	0	22,500
1	G	12,000	STO	0	0				GIMH	0.5	365		16	16	0	0	6,000
1	H	12,000	GIMF	0	0				GIMH	0.5	365		16	16	0	0	6,000
1	I	17,250	PKG	0	0				R&D	0.5	300		29	29	0	0	8,625
1	J	17,250	STO	0	0				R&D	0.5	300		29	29	0	0	8,625
SUBTOTAL		340,550	8	606	0	0	0	0					574	(32)	0	0	144,250
2	A1	37,500	MIXE	24	0				GIMF	0.5	450		42	18	0	0	18,750
2	A2	37,500	MIXE	24	0				GIWL	0.5	700		27	3	0	0	18,750
2	B	37,800	GIMF	150	0				NC				150	0	0	0	0
2	C	15,500	GC	13	0				NC				13	0	0	0	0
2	D	8,600	GIMF	3	0				NC				3	0	0	0	0
2	E	14,200	RET	3	0				NC				3	0	0	0	0
2	F	49,500	GIWL	51	0				GIWL	0.5	700		35	(16)	0	0	24,750
2	G	30,000	GIMF	30	0				NC				30	0	0	0	0
2	H	17,050	GIWL	12	0				NC				12	0	0	0	0
2	I	30,000	GIWL	25	0				NC				25	0	0	0	0
2	J	6,000	RET	3	0				NC				3	0	0	0	0
2	K	22,500	GIMF	18	0				NC				18	0	0	0	0
2	L	7,500	RET	2	0				NC				2	0	0	0	0
SUBTOTAL		313,650	7	358	0	0	0	0					363	5	0	0	62,250
3	A	18,000	GIMF	76	0				GIWL	0.5	700		13	(63)	0	0	9,000
3	B	28,600	GIMF	67	0				NC				67	0	0	0	0
3	C	7,600	GC	5	0				GIWL	0.5	700		5	0	0	0	3,800
3	D	14,400	GIWL	8	0				GIWL	0.5	700		10	2	0	0	7,200
3	E	10,350	GIMF	8	0				GIMH	0.5	365		14	6	0	0	5,175
3	F	349,900	GIMF	568	0				NC				568	0	0	0	0
3	G	62,000	GC	2	0				NC				2	0	0	0	0
3	H	13,500	GIWL	23	0				NC				23	0	0	0	0
SUBTOTAL		504,350	12	757	0	0	0	0					703	(54)	0	0	25,175
4	A	24,000	GC	20	0				CMAR	0.7	1,300		13	(7)	0	0	16,800
4	B	17,100	LIMF	35	0				CMAR	0.7	1,300		9	(26)	0	0	11,970
4	C	4,800	LIMF	0	0				CMAR	0.7	1,300		3	3	0	0	3,360
4	E	14,400	LIMF	0	0				RS15		0	15	0	0	5	5	0
4	D	460,250	RS15	0	134	47	67	20	NC				0	0	134	0	0
SUBTOTAL		520,550	12	55	134	47	67	20					25	(30)	139	5	32,130

GRP BLK	AREA (SF)	EXISTING							PROPOSALS			IMPACTS				
		EXIST. USE/AC	NO. ENPL	DWELLING UNITS				PROP USE	SQ FT/ FAR	EMPL	DU/ ACRE	PROP ENPL	NET CH ENPL	TOTAL DUs	NET CH DUs	TOTAL AREA
5 A	53,000	LIWL	38	0				PBOS		0		0	(38)	0	0	0
5 B	6,500	PBOS	0	0				NC				0	0	0	0	0
5 C	383,600	RS15	2	117	29	70	18	NC				2	0	117	0	0
5 D	6,000	GC	375	0				NC				375	0	0	0	0
5 E	62,900	PBFC	8	0				NC				8	0	0	0	0
5 F	19,000	MIXE	10	0				NC				10	0	0	0	0
5 G	8,100	VAC	0	0				RS15		0	15	0	0	3	3	0
5 H	51,350	RET	68	0				NC				68	0	0	0	0
5 I	8,100	LIMF	8	0				GC	1.0	500		16	8	0	0	8,100
5 J	9,000	GC	18	0				NC				18	0	0	0	0
SUBTOTAL	607,550	14	527	117	29	70	18					497	(30)	120	3	8,100
6 A	59,400	LIWL	18	0				LIWL	0.7	700		59	41	0	0	41,580
6 B	54,050	GC	88	0				NC				88	0	0	0	0
6 C	42,000	LIMF	0	0				CMPR	0.7	450		65	65	0	0	29,400
6 D	13,750	LIMF	38	0				NC				38	0	0	0	0
6 E	20,000	LIMF	130	0				LIMF	0.7	450		31	(99)	0	0	14,000
6 F	10,000	STO	0	0				LIMF	0.7	450		16	16	0	0	7,000
6 G	15,000	GC	30	0				NC				30	0	0	0	0
6 H	48,600	LIMF	15	0				NC				15	0	0	0	0
6 I	69,500	MIXE	88	0				CMLB	0.7	300		162	74	0	0	48,650
6 J	17,500	LIMF	90	0				CMLB	0.7	300		41	(49)	0	0	12,250
6 K	21,700	GC	9	0				NC				9	0	0	0	0
6 L1	49,250	MIXE	89	0				CMPR	0.7	450		77	(12)	0	0	34,475
6 L2	49,250	MIXE	89	0				CMAR	0.7	1,300		27	(62)	0	0	34,475
6 M1	8,250	GC	2	0				CMPR	0.7	450		13	11	0	0	5,775
6 M2	8,250	GC	3	0				CMAR	0.7	1,300		4	1	0	0	5,775
SUBTOTAL	486,500	11	689	0	0	0	0					675	(14)	0	0	233,380
7 A	52,900	LIMF	15	0				CMAR	1.0	1,300		41	26	0	0	52,900
7 B	173,000	MIXE	69	0				NC				69	0	0	0	0
7 C	26,000	PBUT	0	0				NC				0	0	0	0	0
7 D	40,000	MIXE	35	0				NC				35	0	0	0	0
7 E1	51,692	MIXE	34	0				OFC	1.0	300		172	139	0	0	51,692
7 E2	2,872	MIXE	2	0				RET	1.0	7		410	408	0	0	2,872
7 E3	57,436	MIXE	37	0				RS30		0	30	0	(37)	40	40	0
7 F1	11,538	LIWL	10	0				OFC	1.0	300		38	29	0	0	11,538
7 F2	641	LIWL	1	0				RET	1.0	700		1	0	0	0	641
7 F3	12,821	LIWL	11	0				RS30		0	30	0	(11)	9	9	0
7 G1	14,123	GC	4	0				OFC	1.0	300		47	43	0	0	14,123
7 G2	785	GC	0	0				RET	1.0	700		1	1	0	0	785
7 G3	15,692	GC	4	0				RS30		0	30	0	(4)	11	11	0
7 H1	12,646	PBUT	0	0				OFC	1.0	300		42	42	0	0	12,646
7 H2	703	PBUT	0	0				RET	1.0	700		1	1	0	0	703
7 H3	14,051	PBUT	0	0				RS30		0	30	0	0	10	10	0
SUBTOTAL	486,900	11	221	0	0	0	0					858	637	69	69	147,900
8 A1	101,500	LIMF	50					LIWL	0.7	700		102	52	0	0	71,050
8 A2	101,500	LIMF	50					LIMF	0.7	450		158	108	0	0	71,050
8 B	133,200	STO	0					LIWL	0.7	700		133	133	0	0	93,240
8 C	199,800	LIWL	35					NC				35	0	0	0	0
8 D	5,000	LIMF	6					NC				6	0	0	0	0

		EXISTING						PROPOSALS				IMPACTS				
GRP	BLK	AREA (SF)	EXIST. USE/AC	NO. EMPL	DWELLING UNITS			PROP USE	SQ FT/ FAR	DU/ EMPL	ACRE	PROP EMPL	NET CH EMPL	TOTAL DUs	NET CH DUs	TOTAL AREA
					TOTAL	SFD	2-4	5+								
8 E		9,000	LIWL	8					NC			8	0	0	0	0
8 F		19,500	PBFC	14					NC			14	0	0	0	0
8 G		135,000	LIMF	78					CMAR	0.7	1,300	73	(5)	0	0	94,500
8 H		175,000	MIXE	89					NC			89	0	0	0	0
SUBTOTAL		879,500	20	330	0	0	0	0				617	287	0	0	329,840
9 A1		63,911	VAC	0	0				OFC	1.0	300	213	213	0	0	63,911
9 A2		3,994	VAC	0	0				RET	1.0	700	6	6	0	0	3,994
9 A3		6,231	VAC	0	0				CMAR	1.0	1,300	5	5	0	0	6,231
9 A4		45,696	VAC	0	0				GC	1.0	500	91	91	0	0	45,696
9 A5		23,967	VAC	0	0				RS45		0	0	0	25	25	0
9 B1		64,356	LIWL	13	0				OFC	1.0	300	215	201	0	0	64,356
9 B2		4,022	LIWL	1	0				RET	1.0	700	6	5	0	0	4,022
9 B3		6,275	LIWL	1	0				CMAR	1.0	1,300	5	4	0	0	6,275
9 B4		46,014	LIWL	10	0				GC	1.0	500	92	82	0	0	46,014
9 B5		24,133	LIWL	5	0				RS45		0	0	(5)	25	25	0
9 C1		35,111	LITR	12	0				OFC	1.0	300	117	105	0	0	35,111
9 C2		2,194	LITR	1	0				RET	1.0	700	3	2	0	0	2,194
9 C3		3,423	LITR	1	0				CMAR	1.0	1,300	3	1	0	0	3,423
9 C4		25,104	LITR	9	0				GC	1.0	500	50	41	0	0	25,104
9 C5		13,167	LITR	5	0				RS45		0	0	(5)	14	14	0
9 D1		120,622	GC	38	0				OFC	1.0	300	402	364	0	0	120,622
9 D2		7,539	GC	2	0				RET	1.0	700	11	8	0	0	7,539
9 D3		11,761	GC	4	0				CMAR	1.0	1,300	9	5	0	0	11,761
9 D4		86,245	GC	27	0				GC	1.0	500	172	145	0	0	86,245
9 D5		45,233	GC	14	0				RS45		0	0	(14)	47	47	0
9 E1		60,000	LIWL	7	0				OFC	1.0	300	200	193	0	0	60,000
9 E2		3,750	LIWL	0	0				RET	1.0	700	5	5	0	0	3,750
9 E3		5,850	LIWL	1	0				CMAR	1.0	1,300	5	4	0	0	5,850
9 E4		42,900	LIWL	5	0				GC	1.0	500	86	81	0	0	42,900
9 E5		22,500	LIWL	3	0				RS45		0	0	(3)	23	23	0
9 F1		42,667	MIXE	26	0				OFC	1.0	300	142	116	0	0	42,667
9 F2		2,667	MIXE	2	0				RET	1.0	700	4	2	0	0	2,667
9 F3		4,160	MIXE	3	0				CMAR	1.0	1,300	3	1	0	0	4,160
9 F4		30,507	MIXE	18	0				GC	1.0	500	61	43	0	0	30,507
9 F5		16,000	MIXE	10	0				RS45		0	0	(10)	17	17	0
9 G1		13,333	RET	1	0				OFC	1.0	300	44	43	0	0	13,333
9 G2		833	RET	0	0				RET	1.0	700	1	1	0	0	833
9 G3		1,300	RET	0	0				CMAR	1.0	1,300	1	1	0	0	1,300
9 G4		9,533	RET	1	0				GC	1.0	500	19	18	0	0	9,533
9 G5		5,000	RET	0	0				RS45		0	0	0	5	5	0
SUBTOTAL		900,000	21	218	0	0	0	0				1,971	1,753	155	155	750,000
10 A		17,700	MIXE	8	0				PBOS		0	0	(8)	0	0	0
10 B		25,000	OFC	18	0				NC			18	0	0	0	0
10 C		11,000	MIXE	8	0				RS30		0	0	(8)	8	8	0
10 D		10,000	LIWL	16	0				RS30		0	0	(16)	7	7	0
10 E		5,000	VAC	0	0				RS30		0	0	0	3	3	0
10 F		138,600	LIMF	52	0				RS30		0	0	(52)	95	95	0
10 G		213,500	RS15	0	76	34	34	8	NC			0	0	76	0	0
10 H		7,000	OFC	40	0				RS30		0	0	(40)	5	5	0
10 I		119,000	RS15	0	17	17			NC			0	0	17	0	0
10 J		18,150	PKG	0	0				RS30		0	0	0	13	13	0

GRP BLK	AREA (SF)	EXISTING						PROPOSALS				IMPACTS				
		EXIST. USE/AC	NO. EMPL	DWELLING UNITS				PROP USE	SQ FT/ FAR	DU/ EMPL	ACRE	PROP EMPL	NET CH EMPL	TOTAL DUs	NET CH DUs	TOTAL AREA
SUBTOTAL	564,950	13	142	93	51	34	8					18	(124)	224	131	0
11 A	47,500	RET	5	0				RET	0.7	700		48	43	0	0	33,250
11 B	385,200	PBUT	76	0				RS30		0	30	0	(76)	265	265	0
11 C	92,000	LIMF	8	0				RS30		0	30	0	(8)	63	63	0
11 D	50,000	LIMF	22	0				RS30		0	30	0	(22)	34	34	0
11 E	345,600	PBFC	21	0				NC				21	0	0	0	0
11 F	339,900	RS30	0	112		112		NC				0	0	112	0	0
11 G	13,000	LIWL	0	0				RET	0.7	700		13	13	0	0	9,100
11 H	30,000	LIMF	0	0				PBOS				0	0	0	0	0
SUBTOTAL	1,303,200	30	132	112	0	112	0					82	(51)	475	363	42,350
12 A1	52,925	LIMF	88	0				OFC	1.0	300		176	89	0	0	52,925
12 A2	52,925	LIMF	88	0				GC	1.0	500		106	18	0	0	52,925
12 B1	10,600	VAC	0	0				RET	1.0	700		15	15	0	0	10,600
12 B2	10,600	VAC	0	0				OFC	1.0	300		35	35	0	0	10,600
12 B3	21,200	VAC	0	0				GC	1.0	500		42	42	0	0	21,200
12 C1	25,000	LIWL	15	0				OFC	1.0	300		83	68	0	0	25,000
12 C2	25,000	LIWL	15	0				GC	1.0	500		50	35	0	0	25,000
12 D1	21,150	PKG	0	0				OFC	1.0	300		71	71	0	0	21,150
12 D2	21,150	PKG	0	0				GC	1.0	500		42	42	0	0	21,150
12 E	22,700	GC	6	0				NC				6	0	0	0	0
12 F	50,000	PKG	0	0				OFC	1.0	300		167	167	0	0	50,000
12 G	105,800	MIXE	221	0				NC				221	0	0	0	0
SUBTOTAL	419,050	10	432	0	0	0	0					1,015	583	0	0	290,550
13 A	52,375	LIWL	55	0				GC	1.0	500		105	50	0	0	52,375
13 B	64,400	MIXE	55	0				R&D	1.0	300		215	160	0	0	64,400
13 C	38,500	LIMF	84	0				R&D	1.0	300		128	44	0	0	38,500
13 D	30,000	PBUT	0	0				R&D	1.0	300		100	100	0	0	30,000
13 E1	130,680	PBUT	16	0				PBOS		0		0	(16)	0	0	0
13 E2	39,660	PBUT	5	0				OFC	1.0	300		132	127	0	0	39,660
13 E3	39,660	PBUT	5	0				GC	1.0	500		79	75	0	0	39,660
13 F	40,000	GC	39	0				NC				39	0	0	0	0
13 G	7,000	LIMF	8	0				NC				8	0	0	0	0
13 H	217,200	MIXE	640	0				NC				640	0	0	0	0
13 I	20,000	RET	10	0				GC	1.0	500		40	30	0	0	20,000
13 J1	9,375	PBUT	0	0				GC	1.0	500		19	19	0	0	9,375
13 J2	9,375	PBUT	0	0				OFC	1.0	300		31	31	0	0	9,375
13 K	27,250	PBUT	0	0				GC	1.0	500		55	55	0	0	27,250
13 L	6,000	PKG	0	0				GC	1.0	300		20	20	0	0	6,000
13 M	13,200	LIMF	25	0				NC				25	0	0	0	0
SUBTOTAL	744,675	17	941	0	0	0	0					1,636	695	0	0	336,595
14 A	60,000	PKG	0	0				PBOS		0		0	0	0	0	0
14 B	110,000	RET	250	0				NC				250	0	0	0	0
14 C	106,250	GC	74	0				NC				74	0	0	0	0
SUBTOTAL	276,250	6	324	0	0	0	0					324	0	0	0	0
15 A1	8,788	LIWL	20	0				GC	0.7	500		12	(8)	0	0	6,151

GRP	BLK	AREA (SF)	EXISTING					PROPOSALS				IMPACTS			
			EXIST.	NO.	DWELLING UNITS			PROP	SQ FT/	DU/	PROP	NET CH	TOTAL	NET CH	TOTAL
			USE/AC	EMPL	TOTAL	SFD	2-4	USE	FAR	ACRE	EMPL	EMPL	DUs	DUs	AREA
15	A2	8,788	LIWL	20	0			CMFG	0.7	1,300		5	(15)	0	6,151
15	B1	8,788	LIMF	0	0			CMFG	0.7	1,300		5	5	0	6,151
15	B2	8,788	LIMF	0	0			CMFG	0.7	1,300		5	5	0	6,151
15	C1	7,311	LIWL	21	0			CMFG	0.7	1,300		4	(17)	0	5,118
15	C2	7,311	LIWL	21	0			CMFG	0.7	1,300		4	(17)	0	5,118
15	D1	20,880	PKG	0	0			GC	0.7	500		29	29	0	14,616
15	D2	20,880	PKG	0	0			GC	0.7	500		29	29	0	14,616
15	E1	5,484	LIWL	13	0			GC	0.7	500		8	(5)	0	3,838
15	E2	5,484	LIWL	12	0			GC	0.7	500		8	(4)	0	3,838
SUBTOTAL			102,500	2	107	0	0	0	0			108	2	0	71,750
16	A	25,000	PBUT	0	0			PBOS		0		0	0	0	0
16	B1	225,000	PBUT	0	0			CMFM	0.7	350		450	450	0	157,500
16	B2	25,000	PBUT	0	0			PBOS		0		0	0	0	0
16	C	38,700	MIXE	169	0			NC				169	0	0	0
16	D	100,900	PBUT	0	0			CMAR	0.7	1,300		54	54	0	70,630
16	E	77,400	MIXE	71	0			NC				71	0	0	0
SUBTOTAL			492,000	11	240	0	0	0	0			744	504	0	228,130
17	A1	26,250	LIWL	4	0			CMFN	0.7	700		26	22	0	18,375
17	A2	26,250	LIWL	4	0			CMAR	0.7	1,300		14	10	0	18,375
17	B1	2,500	LIMF	7	0			CMFN	0.7	700		3	(5)	0	1,750
17	B2	2,500	LIMF	6	0			CMAR	0.7	1,300		1	(5)	0	1,750
17	C1	5,500	LIWL	6	0			CMFN	0.7	700		6	(1)	0	3,850
17	C2	5,500	LIWL	6	0			CMAR	0.7	1,300		3	(3)	0	3,850
17	D1	5,000	PKG	0	0			CMFN	0.7	700		5	5	0	3,500
17	D2	5,000	PKG	0	0			CMAR	0.7	1,300		3	3	0	3,500
17	E1	3,000	LIMF	2	0			CMFN	0.7	700		3	2	0	2,100
17	E2	3,000	LIMF	1	0			CMAR	0.7	1,300		2	1	0	2,100
17	F1	2,500	GC	1	0			CMFN	0.7	700		3	2	0	1,750
17	F2	2,500	GC	1	0			CMAR	0.7	1,300		1	0	0	1,750
17	G1	1,500	VAC	0	0			CMFN	0.7	700		2	2	0	1,050
17	G2	1,500	VAC	0	0			CMAR	0.7	1,300		1	1	0	1,050
17	H1	5,500	LIWL	8	0			CMFN	0.7	700		6	(3)	0	3,850
17	H2	5,500	LIWL	8	0			CMAR	0.7	1,300		3	(5)	0	3,850
17	I1	7,050	PBUT	0	0			CMFN	0.7	700		7	7	0	4,935
17	I2	7,050	PBUT	0	0			CMAR	0.7	1,300		4	4	0	4,935
17	J	21,800	LIMF	40	0			CMFG	0.7	700		22	(18)	0	15,260
17	K1	43,750	MIXE	50	0			CMFN	0.7	700		44	(6)	0	30,625
17	K2	43,750	MIXE	50	0			CMAR	0.7	1,300		24	(26)	0	30,625
17	L	74,000	PBUT	0	0			CMFM	0.7	350		148	148	0	51,800
SUBTOTAL			300,900	7	194	0	0	0	0			328	134	0	210,630
18	A	64,800	MIXE	60	0			LIMF	0.7	450		101	41	0	45,360
18	B	21,250	LIWL	20	0			LIMF	0.7	450		33	13	0	14,875
18	C	132,000	MIXE	180	0			LIMF	0.7	450		205	25	0	92,400
18	D1	367,000	MIXE	164	0			R&D	0.7	300		856	692	0	256,900
18	D2	25,000	MIXE	11	0			PBOS		0		0	(11)	0	0
18	E	34,000	MIXE	37	0			NC				37	0	0	0
18	F1	65,340	PBUT	0	0			PBOS		0		0	0	0	0
18	F2	97,660	PBUT	0	0			R&D	0.7	300		228	228	0	68,362
18	G	103,400	LIWL	48	0			NC				48	0	0	0

GRP BLK	AREA (SF)	EXISTING						PROPOSALS				IMPACTS				
		EXIST. USE/AC	NO. EMPL	DWELLING UNITS				PROP USE	SQ FT/ FAR	DU/ EMPL	ACRE	PROP EMPL	NET CH EMPL	TOTAL DUS	NET CH DUS	TOTAL AREA
18 H	26,000	STO	0	0				LIMF	0.7	400		46	46	0	0	18,200
18 I	2,800	VAC	0	0				LIMF	0.7	400		5	5	0	0	1,960
18 J	15,300	LIWL	8	0				NC				8	0	0	0	0
SUBTOTAL	954,550	22	528	0	0	0	0					1,567	1,039	0	0	498,057
19 A	10,100	RET	6	0				LIMF	0.7	450		16	10	0	0	7,070
19 B	51,000	LIMF	40	0				LIMF	0.7	450		79	39	0	0	35,700
19 C	18,850	VAC	0	0				LIMF	0.7	450		29	29	0	0	13,195
19 D	58,500	LIMF	49	0				LIMF	0.7	450		91	42	0	0	40,950
19 E	190,000	LITR	8	0				BPK	0.7	850		156	148	0	0	133,000
19 F	23,100	MIXE	12	0				LIMF	0.7	450		36	24	0	0	16,170
19 G	10,000	LIMF	8	0				LIMF	0.7	450		16	8	0	0	7,000
19 H	28,500	RET	2	0				LIMF	0.7	450		44	42	0	0	19,950
19 I	10,500	PKG	0	0				LIMF	0.7	450		16	16	0	0	7,350
19 J	49,800	LIMF	77	0				NC				77	0	0	0	0
19 K	16,200	GC	2	0				NC				2	0	0	0	0
19 L	16,900	MIXE	62	0				NC				62	0	0	0	0
19 M	52,000	LIWL	33	0				NC				33	0	0	0	0
19 O	14,000	GC	8	0				NC				8	0	0	0	0
19 N	8,500	LIWL	18	0				NC				18	0	0	0	0
SUBTOTAL	557,950	13	325	0	0	0	0					684	359	0	0	280,385
20 A	31,200	MIXE	26	0				OFC	0.7	300		73	47	0	0	21,840
20 B	39,000	GC	2	0				LIMF	0.7	450		61	59	0	0	27,300
20 C	108,000	LIMF	130	0				LIMF	0.7	450		168	38	0	0	75,600
20 D	56,000	GC	36	0				LIMF	0.7	450		87	51	0	0	39,200
20 E	30,800	GC	0	0				GC	0.7	500		43	43	0	0	21,560
20 F	660,000	GC	115	0				BPK	0.7	850		544	429	0	0	462,000
20 G	42,900	MIXE	37	0				NC				37	0	0	0	0
20 H	12,000	MIXE	17	0				NC				17	0	0	0	0
20 I	26,600	LIWL	4	0				NC				4	0	0	0	0
20 J	22,500	OFC	57	0				NC				57	0	0	0	0
20 K	77,000	LIMF	55	0				NC				55	0	0	0	0
20 L	50,000	LIWL	25	0				NC				25	0	0	0	0
20 M	188,000	PBFC	25	0				NC				25	0	0	0	0
20 N	32,500	GC	150	0				NC				150	0	0	0	0
SUBTOTAL	1,376,500	32	679	0	0	0	0					1,345	666	0	0	647,500
21 A	66,000	RET	29	0				RET	0.7	700		66	37	0	0	46,200
21 B	59,400	LIMF	150	0				RET	0.7	700		59	(91)	0	0	41,580
21 C1	69,700	LIMF	88	0				OFC	0.7	300		163	75	0	0	48,790
21 C2	69,700	LIMF	88	0				RS30		0	30	0	(88)	48	48	0
21 D	157,500	LIMF	0	0				RS30		0	30	0	0	108	108	0
21 E	244,625	LIMF	0	0				RS30		0	30	0	0	168	168	0
21 F	72,000	RS15	0	17	5		12	NC				0	0	17	0	0
21 G	32,400	VAC	0	0				RS30		0	30	0	0	22	22	0
21 H	19,500	VAC	0	0				RS30		0	30	0	0	13	13	0
21 J	15,600	VAC	0	0				RET	0.7	700		16	16	0	0	10,920
21 I	19,200	PBFC	16	0				NC				16	0	0	0	0
SUBTOTAL	825,625	19	370	17	5	0	12					320	(50)	378	361	147,490

GRP	BLK	AREA (SF)	EXISTING					PROPOSALS				IMPACTS					
			EXIST. USE/AC	NO. EMPL	DWELLING UNITS			PROP USE	SQ FT/ FAR	DU/ EMPL	ACRE	PROP EMPL	NET CH EMPL	TOTAL DUs	NET CH DUs	TOTAL AREA	
22	A	415,650	LITR	15	0				BPK	0.7	850		342	327	0	0	290,955
22	B	9,700	MIXE	9	0				GC	0.7	500		14	5	0	0	6,790
22	C	13,300	RET	8	0				GC	0.7	500		19	11	0	0	9,310
SUBTOTAL		438,650	10	32	0	0	0	0					375	343	0	0	307,055
23	A	11,700	GC	8	0				GC	0.7	500		16	8	0	0	8,190
23	B	9,400	VAC	0	0				GC	0.7	500		13	13	0	0	6,580
23	C	16,500	GC	10	0				NC				10	0	0	0	0
23	D	41,300	RS15	0	14	14			GC	0.7	500	0	58	58	0	(14)	28,910
23	E	29,600	GC	22	0				NC				22	0	0	0	0
SUBTOTAL		108,500	2	40	14	14	0	0					119	79	0	(14)	43,680
24	A	31,500	GC	5	0				NC				5	0	0	0	0
24	B	16,500	LIWL	22	0				NC				22	0	0	0	0
SUBTOTAL		48,000	1	27	0	0	0	0					27	0	0	0	0
25	A	15,000	GC	28	0				GC	0.7	500		21	(7)	0	0	10,500
25	B	18,000	GC	8	0				NC				8	0	0	0	0
25	C	20,900	LIWL	12	0				NC				12	0	0	0	0
25	D	46,350	MIXE	2	0				NC				2	0	0	0	0
SUBTOTAL		100,250	2	50	0	0	0	0					43	(7)	0	0	10,500
26	AA	28,000	LIWL	152					RS15		0	15	0	(152)	10	10	0
26	AB	56,300	MIXE	315					RS15		0	15	0	(315)	19	19	0
26	AC	670,500	RS15	0	183	55	106	22	NC				0	0	183	0	0
26	AD	838,700	RS15	0	238	81	104	53	NC				0	0	238	0	0
26	AE	23,300	GC	10					GC	0.7	500		33	23	0	0	16,310
26	AF	15,000	PBFC	10					NC				10	0	0	0	0
26	A	14,000	VAC	0					GC	0.7	500		20	20	0	0	9,800
26	B	23,000	LIMF	43					GC	0.7	500		32	(11)	0	0	16,100
26	C	40,800	GC	6					GC	0.7	500		57	52	0	0	28,560
26	D	42,900	LIWL	8					GC	0.7	500		60	52	0	0	30,030
26	E	1,900	RET	8					GC	0.7	500		3	(5)	0	0	1,330
26	F	17,600	LIMF	33					NC				33	0	0	0	0
26	G	13,100	GC	2					GC	0.7	500		18	17	0	0	9,170
26	H	96,000	VAC	0					GC	0.7	500		134	134	0	0	67,200
26	I	17,500	GC	2					GC	0.7	500		25	22	0	0	12,250
26	J	5,500	RET	1					GC	0.7	500		8	7	0	0	3,850
26	K	8,100	RET	14					GC	0.7	500		11	(3)	0	0	5,670
26	L	24,000	RS15	0	18	8	4	6	NC				0	0	18	0	0
26	M	9,000	RET	2					GC	0.7	500		13	11	0	0	6,300
26	N	27,000	PKG	0					GC	0.7	500		38	38	0	0	18,900
26	O	26,100	GC	53					GC	0.7	500		37	(16)	0	0	18,270
26	P	47,100	LIWL	175					NC				175	0	0	0	0
26	Q	7,800	RET	2					NC				2	0	0	0	0
26	R	12,000	PBFC	5					NC				5	0	0	0	0
26	S	18,000	GC	18					NC				18	0	0	0	0
26	T	62,100	GC	0					NC				0	0	0	0	0
26	U	94,400	PBFC	14					NC				14	0	0	0	0
26	V	25,500	RET	4					NC				4	0	0	0	0
26	W	27,000	LIMF	35					NC				35	0	0	0	0

GRP	BLK	AREA (SF)	EXISTING					PROPOSALS				IMPACTS				
			EXIST. USE/AC	NO. EMPL	DWELLING UNITS			PROP USE	SQ FT/ FAR	DU/ EMPL	ACRE	PROP EMPL	NET CH EMPL	TOTAL NET CH DUs	TOTAL NET CH DUs	TOTAL AREA
26	X	98,000	LIWL	38				NC				38	0	0	0	0
26	Y	4,500	GC	20				NC				20	0	0	0	0
26	Z	139,500	RS15	0	33	13	20	NC				0	0	33	0	0
SUBTOTAL		2,534,200	58	969	472	157	233	81				841	(128)	501	29	243,740
27	A	199,202	MIXE	122				OFC	1.0	300		664	542	0	0	199,202
27	B1	96,159	GIMF	0				OFC	1.3	300		417	417	0	0	125,007
27	B2	48,080	GIMF	0				RS45		0	45	0	0	50	50	0
27	B3	16,027	GIMF	0				RET	1.3	700		30	30	0	0	20,835
27	C	108,267	GIMF	3				OFC	1.3	300		469	466	0	0	140,747
27	D	424,402	MIXE	138				RS45		0	45	0	(138)	438	438	0
27	E	363,863	MIXE	40				OFC	1.3	300		1,577	1,537	0	0	473,022
SUBTOTAL		1,256,000	29	303	0	0	0	0				3,156	2,853	488	488	958,813
28	A1	105,021	UT	13				OFC	1.5	300		525	512	0	0	157,532
28	A2	52,511	UT	13				RS45		0	45	0	(13)	54	54	0
28	A3	17,504	UT	14				RET	1.5	700		38	24	0	0	26,255
28	B1	44,501	MIXE	15				OFC	2.0	300		297	282	0	0	89,001
28	B2	22,250	MIXE	15				RS45		0	45	0	(15)	23	23	0
28	B3	7,417	MIXE	14				RET	2.0	700		21	7	0	0	14,834
28	C	53,005	UT	12				OFC	2.0	300		353	341	0	0	106,010
28	D	69,025	GIWL	23				OFC	1.5	300		345	322	0	0	103,538
28	E	275,705	RS45	8	582		582	NC				8	0	582	0	0
28	F1	273,530	MIXE	42				OFC	2.0	300		1,824	1,782	0	0	547,059
28	F2	136,765	MIXE	42				RS45		0	45	0	(42)	141	141	0
28	F3	45,588	MIXE	42				RET	2.0	700		130	88	0	0	91,177
28	G1	218,630	MIXE	98				OFC	2.0	300		1,458	1,360	0	0	437,259
28	G2	109,315	MIXE	98				RS45		0	45	0	(98)	113	113	0
28	G3	36,438	MIXE	97				RET	2.0	700		104	7	0	0	72,877
28	H1	155,930	RET	53				OFC	2.0	300		1,040	986	0	0	311,860
28	H2	77,965	RET	53				RS45		0	45	0	(53)	81	81	0
28	H3	25,988	RET	54				RET	2.0	700		74	20	0	0	51,977
28	I1	41,415	MIXE	26				OFC	1.5	300		207	181	0	0	62,123
28	I2	20,708	MIXE	26				RS45		0	45	0	(26)	21	21	0
28	I3	6,903	MIXE	25				RET	1.5	700		15	(10)	0	0	10,354
28	J1	54,113	RET	8				OFC	1.0	300		180	172	0	0	54,113
28	J2	27,056	RET	8				RS45		0	45	0	(8)	28	28	0
28	J3	9,019	RET	9				RET	1.0	700		13	4	0	0	9,019
28	K	91,500	OFC	280				NC				280	0	0	0	0
SUBTOTAL		1,977,800	45	1,088	582	0	0	582				6,911	5,823	1,043	461	2,144,986
29	A1	34,200	MIXE	13				OFC	1.0	300		114	101	0	0	34,200
29	A2	17,100	MIXE	6				RS45		0	45	0	(6)	18	18	0
29	A3	5,700	MIXE	2				RET	1.0	700		8	6	0	0	5,700
29	A4	80,700	MIXE	29				OFC	1.3	300		350	320	0	0	104,910
29	A5	40,350	MIXE	15				RS45		0	45	0	(15)	42	42	0
29	A6	13,450	MIXE	5				RET	1.3	700		25	20	0	0	17,485
29	A7	167,376	MIXE	61				OFC	1.5	300		837	776	0	0	251,064
29	A8	83,688	MIXE	31				RS45		0	45	0	(31)	86	86	0
29	A9	27,896	MIXE	10				RET	1.5	700		60	50	0	0	41,844
29	B	269,393	UT	23				OFC	1.5	300		1,347	1,324	0	0	404,090
29	C1	274,528	MIXE	41				OFC	1.5	300		1,373	1,332	0	0	411,792

		EXISTING						PROPOSALS				IMPACTS				
GRP	BLK	AREA (SF)	EXIST. USE/AC	NO. EMPL	DWELLING UNITS			PROP USE	SQ FT/ FAR	DU/ EMPL	ACRE	PROP EMPL	NET CH EMPL	TOTAL DUs	NET CH DUs	TOTAL AREA
29	C2	137,264	MIXE	41				RS45		0	45	0	(41)	142	142	0
29	C3	45,755	MIXE	40				RET	1.5	700		98	58	0	0	68,632
29	D	42,600	HOTL	35				NC				35	0	0	0	0
SUBTOTAL		1,240,000		28	351	0	0	0	0			4,246	3,895	288	288	1,339,717
30	A1	158,378	VAC	1				OFC	1.3	300		686	685	0	0	205,892
30	A2	79,189	VAC	1				RS45		0	45	0	(1)	82	82	0
30	A3	26,396	VAC	1				RET	1.3	700		49	48	0	0	34,315
30	B	242,426	GIMF	16				PBOS		0		0	(16)	0	0	0
30	C	409,343	GIMF	123				RET	1.3	700		760	637	0	0	532,145
30	D1	183,134	GIMF	97				RET	1.0	700		262	165	0	0	183,134
30	D2	183,134	GIMF	97				RET	1.3	700		340	243	0	0	238,074
SUBTOTAL		1,282,000		29	336	0	0	0	0			2,097	1,761	82	82	1,193,560
31	A1	676,600	PBOS	0				NC				0	0	0	0	0
31	A2	5,000	RET	5				NC				5	0	0	0	0
31	B	102,400	RET	10				NC				10	0	0	0	0
31	C	139,200	PBFC	8				NC				8	0	0	0	0
31	D1	1,001,600	RS30	0	1,249		1,249	NC				0	0	1,249	0	0
31	D2	0	RET	35				NC				35	0	0	0	0
31	D3	0	MIX	35				NC				35	0	0	0	0
31	E	56,000	PBFC	46				NC				46	0	0	0	0
31	F	196,020	PBOS	0				NC				0	0	0	0	0
31	G	1,531,180	PBOS	0				NC				0	0	0	0	0
31	I1	171,650	RET	270				RET				279	9	0	0	0
31	I2	838,250	OFC	1,299				OFC				3,877	2,578	0	0	0
31	I3	423,700	HOTL	386				HOTL				480	94	0	0	0
SUBTOTAL		5,141,600		118	2,094	1,249	0	0	1,249			4,775	2,681	1,249	0	0

GRAND																
TOTAL:		27,084,700		622	13,464	2,790	303	517	1,970			37,044	23,580	5,210	2,420	10,728,512
(acres)																

- Note: 1. The current number of employees shown above differs from that shown throughout the General Plan. The total above (13,464) represents an updated figure.
2. ABAG's figure of 2,950 housing units currently existing has been used throughout the Plan in order to maintain consistency with ABAG's year 2005 projection figures.

TABLE 1: KEY FOR LAND USE INVENTORY

<u>Abbreviation</u>	<u>Land Use</u>	<u>Density (s.f./employee or du/acre)</u>
<u>Non-residential</u>		
BPK	Business Park: Light Ind., Research	850
CMAR	Custom Manufacturing--Art	1,300
CMFG	Custom Manufacturing--General	1,300
CMFM	Custom Manufacturing--Film	350
CMFN	Custom Manufacturing--Furniture	700
CMLB	Custom Manufacturing--Lab	300
CMPR	Custom Manufacturing--Printing	450
GC	General Commercial	500
GIMF	General Industrial--Manufacturing	450
GIMH	General Industrial--Machine Shop	365
GIWL	General Industrial--Wholesale	700
HOTL	Hotel	
LIMF	Light Industrial--Manufacturing	450
LITR	Light Industrial--Trucking	
LIWL	Light Industrial--Wholesale	700
MIXE	Mixed--Existing (Industrial)	
NC	No Change from Existing Use	
OFC	Office Commercial	300
PBFC	Public Facility (school, police, fire, City offices)	
PBOS	Public Open Space/Park	
PBUT	Public--Utilities	
PKG	Parking (generally associated with existing Industrial use)	
R&D	Research and Development	300
RET	Retail	700
<u>Residential</u>		
RS15	Residential: low density (0-20 du/ac)	15
RS30	Residential: medium density (20-45 du/ac)	30
RS45	Residential: high density (greater than 45 du/ac)	45
<u>Other</u>		
STO	Storage (generally associated with existing Industrial use)	
VAC	Vacant	

APPENDIX D: OPEN SPACE AND OUTDOOR RECREATION

Open Space/Recreation Classifications

Open space and recreation lands fall into several different categories. Each type of space implies a particular type of use. Acquisition, development, management, and maintenance methods and costs vary with each type of park space. Four types of recreation/open space lands are discussed: ecological preserves, historic/cultural sites, visual amenities, and recreation areas.

Ecological Preserves. An ecological preserve is open space which is left in its natural state or which is improved to restore it to its former natural state. The land is often set aside to preserve a unique plant or animal species or habitat, such as that found in the Emeryville Crescent. The costs associated with these areas are primarily acquisition costs, with minimal maintenance, since active recreation is discouraged, and access often is restricted. Ecological preserves are used mainly for nature study and viewing. As described in the General Plan, acquisition may not be necessary for the Emeryville Crescent.

Historic/Cultural Sites. Sites or structures which uniquely represent some facet of local or national history are valued as historic or cultural resources. Any remnants of the Emeryville shellmounds, if they still exist (see the Cultural Resources Element), would fall under this category. Costs associated with historic or cultural resources vary widely, depending on the nature of the resource (e.g., the site of a historic event or the structure in which it took place, or a potential archaeological find) and how the resource will be used (preserved, developed as a public facility, or restored, for example). Historic structures in Emeryville are significant in that they represent an element of the City's heritage and development. It is not expected that any remnants of the Emeryville shellmounds exist. Thus, this type of recreation resource is mentioned only in the case that some cultural resource is discovered in the future.

Visual Amenities. Street trees and median landscaping, generally associated with City-owned land, can be classified as visual amenities. Costs associated with these vary according to the type and amount of plant material used.

Recreation Areas. Recreation areas, or parks and playgrounds, involve more costs than the other types of open space and recreation lands. Passive recreation areas generally encourage activities such as picnicking, strolling, or sitting, while active recreation areas include facilities for sports or playground equipment for children. A park can include areas for both active and passive activities.

The General Plan describes three recreation area prototypes (see Figure III-11). A mini-park usually is found in a residential area and serves residents in the immediate vicinity (within 1/4 mile). The larger community park of 2-5 acres, which may contain a greater variety of facilities than a mini-park, poses significantly greater acquisition and parcel assembly problems than mini-parks, which may be developed on single vacant lots or at the ends of cul-de-sacs.

Development and Maintenance Costs

It is possible to make some generalizations about relative development and maintenance costs. Development costs are one-time costs of acquisition and construction, often financed in part by grants or development fees; maintenance costs, usually the responsibility of the City, include plant care, trash removal, and repair of damaged facilities.

Development Costs. There are two main aspects of park development costs: land acquisition and development or construction costs. Assuming that per-acre land costs remain constant regardless of parcel size, land for a smaller park will cost less to acquire than land for a larger park. Development costs vary according to the size of the park and the facilities in it. Per-acre development costs decrease as the size of the park increases, due to such factors as increased construction efficiency in developing larger sites and a lower proportion of facilities which are expensive to install, such as paving and playground equipment, included in larger sites.

While the per-acre development costs of small parks may be greater, the total cost of developing a number of small parks may be much lower than the cost of developing a single larger park, depending on the number of small parks. For example, if the City were to develop 10 mini-parks, each of which were 2,500 square feet, the total land area would be 25,000 square feet, or approximately one-half acre. A single community park would be 4-10 times larger, and any cost savings per acre probably would be countered by the total development cost.

Maintenance Costs. The major issues affecting the cost of park maintenance are the amount and kind of vegetation (grass, trees, shrubs, and groundcover), the type of irrigation system (automatic or manually operated), the proximity of storage areas to parks, and the distance maintenance crews must travel to reach parks. In addition, some facilities require special maintenance procedures which can significantly raise the costs. For example, sand in children's play lots must be screened regularly for broken glass and other debris.

As is the case with development costs, the per-acre maintenance costs may be higher for small parks than for large ones due to the time it could take to reach many small, scattered sites and the relative efficiency with which a single large site can be maintained. Again, however, the total area of many small parks will be much smaller than a single, larger park; therefore, the total maintenance costs can be much smaller.

The choice of plant materials also affects maintenance and development costs. Grass areas are extremely low in installation costs when compared with low-maintenance shrubs or trees, but require almost continual care in watering, cutting, fertilizing, and weeding. Perennial plants such as trees, shrubs, and groundcover are moderately expensive to install, and require careful maintenance for the first 2-3 years until established. If appropriate species are chosen, they require almost no maintenance when compared with turf. Beds of flowering annuals are the most expensive plant material to use in parks, both from an installation and a maintenance standpoint.

Generalized Implementation Methods

The following describes open space implementation methods which can be utilized by the City. These include regulatory tools, acquisition methods, and financing tech-

niques. Not all implementation tools are applicable to all types of open space lands. Table I notes the applicability of the methods described below.

Conditions and Dedications. Development approval can be made subject to conditions imposed by local government. Conditions can include requirements for land dedications, fees, or public improvements. A dedication is a gift of land from the developer to the municipality. Instead of donating land, developers can pay fees, usually equal to the cost of land that the developer would otherwise have to dedicate.

Subdivision Map Act. Subdivision regulations (Government Code Section 66511) enable local governments to regulate the design and improvement of land when it is divided for development. A broad interpretation of "design and improvement" has been adopted through court cases and includes the physical layout of a subdivision, dedications of public improvements and easements, and other measures "as may be necessary or convenient to insure conformity to or implementation of the general plan." The types of dedications, public improvements, or in-lieu fees which can be required include: land for park and recreation uses, public access easements, bicycle paths, local and recreational facilities.

Quimby Act. The Quimby Act (Government Code Section 66477) allows local governments to exact land dedications, in-lieu fees, or a combination of both for park and recreation as a condition of approving a final residential subdivision or parcel map. A 1981 legislative counsel opinion suggested that the Quimby Act may be used for park maintenance and utility costs, as well as for acquisition and development. The City would have to adopt a Quimby Act ordinance. Fees collected or land dedicated under the ordinance can only be used to develop new parks or rehabilitate existing parks which will serve the new subdivision, although the parks do not have to serve the new subdivision exclusively.

Planned District and Planned Unit Development Approvals. A developer could be granted "PD" zoning (which can mean higher density and more flexibility in site design and mix of uses) or "PUD" approval (which can mean more flexibility in site design) in exchange for land dedication, improvement of open space areas within the development, or payment of in-lieu fees for purchase of open space elsewhere. This process requires a great deal of negotiation between the developer, planning staff, and public.

Development Agreement. As defined by Government Code Section 65864, local governments can enter into contractual agreements with developers in which the local government effectively promises not to change its planning or zoning laws applicable to the development for a specified period of time, in return for specified commitments (such as development of parks or open space) from the developer, which the jurisdiction could not ordinarily require. Procedures for development agreements are typically added to the community's zoning ordinance. Development agreements may be appropriate for large, multi-phase projects where the developer will be required to make substantial investments for public improvements; the development agreement will contractually assure that the improvements promised by the developer will be implemented even if the development fails financially.

Acquisition. The City can provide public parks and open space by acquiring the land. This reduces the uncertainty that a particular parcel will be developed for open space or recreational purposes. Since costs of full fee acquisition are often prohibitive, several financing schemes and alternative acquisition methods have also been used.

TABLE 1: OPEN SPACE IMPLEMENTATION APPLICABILITY OF METHODS

	<u>Ecological Preserve</u>	<u>Historic/ Cultural Sites</u>	<u>Rec- reation Areas</u>	<u>Visual Amenities</u>
CONDITIONS/DEDICATIONS:				
Subdivision Map Act	X		X	X
Quimby Act	X		X	X
PD/PUD Approval		X	X	X
Development Agreement		X		
ACQUISITION:				
<u>Full Fee Acquisition</u>				
Purchase	X	X	X	X
Installment Purchase	X	X	X	X
Purchase and Sale or Leaseback	X		X	X
Donation of Gift or Bargain Sales	X	X	X	X
Eminent Domain	X		X	
Tax Foreclosures	X	X	X	X
<u>Less Than Fee Acquisition</u>				
Scenic/Conservation Easement	X	X		X
Purchase and Resale Without Certain Rights	X	X	X	
Public Trust	X		X	
Leases	X			
Covenants, Deed Restrictions		X	X	X

Full Fee Acquisition. This technique involves public purchase and ownership of full title to the land and all rights associated with the land. This is the most foolproof way to preserve open space, but its utility is limited by the amount of revenues the City and other agencies have available and are willing to appropriate for open space purposes.

Less Than Fee Acquisition. Associated with each piece of land are development rights. This bundle of rights can be divided, and certain rights can be purchased for less than the full purchase price of the property. This means that a public agency can acquire various forms of development rights, or easements, which are written privileges that one person, public body, etc., has with regard to land owned by another person. The rights can be specified for a certain number of years, or they can run in perpetuity. This form of acquisition is beneficial in that it leaves the land on the tax rolls; however, if the property is in the path of development, the cost of obtaining the easement is often almost as expensive as purchasing the entire fee.

Eminent Domain. The basic problem with the acquisition of land is the high cost to local governments. Lands that will be used by the public must be purchased by some governmental unit, but if a mutually agreeable price cannot be determined, the land must be condemned and just compensation paid for it. There are certain non-recreational purposes for which condemnation is not permitted under State law.

Tax Foreclosures. Lands which are tax-delinquent and have been acquired by the public through foreclosure proceedings may be used for open space purposes or may be exchanged for other lands of equal value but with greater open space importance; or money received from the sale of tax-delinquent lands could be directed to open space acquisition programs. This technique has limited applicability.

Gifts. Gifts of land to local governments offer tax incentives to the donor. The cost of the donation can be deducted from the donor's gross annual income. Since the donor also avoids the capital gains tax which would have to be paid if the land had been sold for development, the total tax savings for the donor in some instances could actually exceed the net after-tax profit which would have been received from the sale. Some private non-profit organizations, such as the Nature Conservancy and the Trust for Public Land, often assist in these arrangements. Gifts of land are often used for ecological preserves, but land which is received may be exchanged for other, more important lands or sold for purposes of acquiring additional land.

Sale of School Lands. The school district could negotiate with the City on the sale of the Ralph Hawley School site to the City. This site could be used for recreation purposes.

Public Trust. As previously mentioned, Emeryville could exercise the public trust over tidelands. This is similar to a less than fee acquisition in that the public will have rights to certain uses of the land but will not gain ownership. The City is not required to compensate the owner of the fee title to the land in these cases, but uses are restricted to those which are consistent with the public trust as defined in the State constitution. These include commerce, navigation, fisheries, recreation, and ecological preservation.

Financing Methods. Methods of financing acquisitions, other than straight purchase, are defined in recognition of the financial burden that purchase often represents to local agencies.

Purchase and Sale or Leaseback. Under this arrangement, the public body would purchase the property and then sell or lease it back to the original owner subject to restrictions which ensure that the land's natural quality will be preserved and that the type and intensity of development is compatible with the natural resource.

Installment Purchase. Purchase of property can be spread out over a period, and periodic payments can be made to the owner, who would be subject to restrictions regarding the use of this land during the payment period.

Bargain Sales. A landowner could sell land at a bargain price to the City, and receive tax benefits from the sale similar to those of a gift. The difference between the value of the property and the sales price could be deducted from the seller's gross annual income. Private, non-profit organizations often assist with these arrangements.

Long-Term Lease or Lease/Purchase. The City can enter into an agreement with a landowner for a period of time long enough to let the owner recoup his investment. Provisions which give the public the option to purchase the land at various prices during the course of the lease may be included in the agreement.

Bonds. The City could issue general obligation bonds, which would require a two-thirds approval of voters. These bonds are payable from ad valorem property taxes, and they would be guaranteed by the City. State law limits the amount of indebtedness which a local government may incur. Revenue bonds, which do not usually require voter approval, are not backed by the local government, and are not subject to the debt ceiling, could also be issued. Their use is limited, however, as they are payable on revenue generated by the project. Most open space projects, other than marinas, would not generate revenue other than through purchase/saleback or purchase/leaseback arrangements.

Other. Fees can be collected under the provisions described under Conditions and Dedications. Federal and State grant programs, individuals, and foundations may be sources of funds. These programs are described in Table 2.

Public Agency Support and Jurisdiction

California Department of Parks and Recreation. The State Department of Parks and Recreation has allocated \$9 million toward the purposes of the East Bay Shoreline Park. These funds may be used for planning, development, and acquisition. Emeryville is among the communities eligible for planning funds. In order to obtain these funds, the City must make a direct request to the State Department of Parks and Recreation. According to State staff, there are no formal application forms or criteria for allocation of funds. A citizens' group currently is working with legislative representatives on funding requests for the East Bay Shoreline Park.

Federal, State, regional, and local agencies have a variety of interests and responsibilities in the conservation and management of open space resources. Many of these agencies have overlapping jurisdictions, and they have not reached a consensus on some issues, such as whether a bicycle path should be installed through the Emeryville Crescent. Several of the agencies are identified below.

TABLE D-2: FUNDING PROGRAMS FOR OPEN SPACE/RECREATION

<u>Project Type</u>	<u>Agency/Program</u>	<u>Purpose/ Eligible Projects</u>	<u>Priorities/ Selection Criteria</u>	<u>Funding Availability and Type</u>	<u>Potential Ap- plication to Emeryville</u>	<u>Example(s) in Adjacent Cities</u>
1. PLANNING						
a. Urban water- front planning grants	State Coastal Conservancy	Plan urban waterfront projects.	Promote innovative design, shoreline uses, public access, and recreation.	Average \$50,000. Type: G	Shoreline planning.	\$50,000--Albany Specific Plan; \$20,000-- Berkeley.
b. Design arts pro- gram (G, M, 100% non- federal)	Design Arts Pro- gram, National Endowment for the Arts	Feasibility studies, schematic projects, and design competitions. May not be used for ongoing city planning.	Integrate design with planning process. Highly competitive.	Up to \$30,000. Type: G, M (100% non- federal)	Urban design for public access on peninsula, for town center, and for other mixed- use open space areas; involve local artist community.	---
2. GENERAL PROJECT IMPLEMENTATION						
a. Urban water- front restoration (Chapter 7)	State Coastal Conservancy	Waterfront restoration projects along bay. Restoration plan (#1a) must be prepared and approved.	Promote access to water, visitor-serving uses, excellence in urban design, environmental enhancement, shoreline industries.	Up to 100% of cost. Type: G, L	Bicycle/pedestri- an trails, marina upgrade.	---
b. Urban waterfront restoration- revenue bonds	State Urban Waterfront Area Restoration Financing Authority	Same as above.	Same as above. Projects must be economically self-sustaining.	Same as above. Type: O	Same as above. Project could be proposed by governmental agency (e.g., City or Redevel- opment Agency) or private entity.	---

G = grant
L = loan

M (50%) = matching (%)
O = other

LG = loan guarantee
C = applications received continuously

A = annual application deadline
2* = 2-year limited program

TABLE D-2: FUNDING PROGRAMS FOR OPEN SPACE/RECREATION (continued)

<u>Project Type</u>	<u>Agency/Program</u>	<u>Purpose/ Eligible Projects</u>	<u>Priorities/ Selection Criteria</u>	<u>Funding Availability and Type</u>	<u>Potential Ap- plication to Emeryville</u>	<u>Example(s) in Adjacent Cities</u>
c. Community De- velopment Block Grants (CDBG)-- small cities	U.S. Department of Housing and Urban Develop- ment	Projects which are eligi- ble under CDBG Act. Grants awarded on a competitive basis.	City determines dis- bursement. State re- quirements emphasize improvement of low- income housing.	Cities do not normally allocate CDBG to parks. Type: G	Parks and play- grounds; commu- nity facilities.	Not normally used for parks.
d. East Bay Shore- line Park	State Parks and Recreation De- partment: Bond Acts; 1975, 1980	Acquisition, planning, development to carry out East Bay Shoreline Park Plan.	Trail connecting East Bay shoreline from Bay Bridge toll plaza to Richmond. Acquisition is a low priority.	\$10,000 minimum; no maximum. \$9 million allo- cated to East Bay cities. Type: G	Shoreline bicy- cle/pedestrian trail; shoreline acquisition/devel- opment as pier. Emeryville has received \$20,000.	Berkeley-- \$572,000; Albany--\$1.2 million to close landfill.
3. FISHING						
a. Pier con- struction or rehabilitation	Wildlife Conser- vation Board	Fishing purposes, pier upgrading. Construc- tion. Proprietary inter- est must be conveyed to the state.	---	Type: G, M (50%) Funds may not be available.	Development of Ashby Spit or North Shore- line; restore fishing pier.	Emeryville received funding to build Penin- sula pier.
4. TRAILS/ACCESS						
a. Access program	State Coastal Conservancy	Trails, parking lots.	Provide access to Bay. Must serve greater than local need. Projects which offer local matching funds are given priority.	Up to 100% of project cost. Type: G, M	---	Berkeley has received funds.
b. Bicycle/pedes- trian facilities	Metropolitan Transportation Commission	Engineering and construction of bicycle/pedestrian facilities.	Ranked according to regionwide priorities.	Coordinate with MTC. Type: G	Citywide bi- cycle/pedestrian lanes and street or rail overcrossings.	---

G = grant
L = loan

M (50%) = matching (%)
O = other

LG = loan guarantee
C = applications received continuously

A = annual application deadline
2* = 2-year limited program

TABLE D-2: FUNDING PROGRAMS FOR OPEN SPACE/RECREATION (continued)

<u>Project Type</u>	<u>Agency/Program</u>	<u>Purpose/ Eligible Projects</u>	<u>Priorities/ Selection Criteria</u>	<u>Funding Availability and Type</u>	<u>Potential Ap- plication to Emeryville</u>	<u>Example(s) in Adjacent Cities</u>
c. Bicycle lane account	Caltrans	Preliminary engineering and pavement markings.	Commuter-serving.	Up to \$90,000. Type: G	Crossings at Powell Street, railway crossings.	Bicycle lane will be built in Albany (through HOV project).
5. PARKS AND PLAYGROUNDS						
a. Roberti-Z'berg urban open space and recreation program	State Department of Parks and Recreation (Bond Act of 1984)	Allocated for each of 2 years. Emeryville must apply for it.	Urban outdoor recreation. Projects must be directed toward providing for the most urgent and unmet recreation needs of residents.	\$1,954. Type: G, block, M (75%), A (May 1)	Improvements to existing parks/playgrounds.	---
b. Regional competitive	State Department of Parks and Recreation (Bond Act of 1984)	Develop or rehabilitate park facilities; acquisition is ineligible. Recreation development on school-owned lands is eligible in some cases.	Less intensive uses, such as fishing piers, have lower priority. Compete within 10 state planning districts.	Minimum \$10,000; no max; \$25 million available for next 2 years. \$5.3 million available to bay region this year. (\$200 million in applications were received this year.) Type: G, A, (Oct. 1)	Development of new parks on dedicated land; upgrade existing parks (e.g., vest-pocket park), shoreline; community center.	Berkeley \$330,000.
c. Land and Water Conservation Fund	National Park Service	Acquisition or development of outdoor park facilities.	Serve outdoor recreation purposes. Low cost/benefit ratio. Less intensive uses, such as fishing piers, have lower priority. Compete within 10 state planning districts. Competitive.	Average \$150,000-\$200,000. Type: G, M (50%), A (until 1990)	Acquisition/development of south peninsula or new urban parks.	
G = grant L = loan						
M (50%) = matching (%) O = other						
LG = loan guarantee C = applications received continuously						
A = annual application deadline 2* = 2-year limited program						

TABLE D-2: FUNDING PROGRAMS FOR OPEN SPACE/RECREATION (continued)

<u>Project Type</u>	<u>Agency/Program</u>	<u>Purpose/ Eligible Projects</u>	<u>Priorities/ Selection Criteria</u>	<u>Funding Availability and Type</u>	<u>Potential Ap- plication to Emeryville</u>	<u>Example(s) in Adjacent Cities</u>
6. MARINA, BOAT- ING, SHORELINE						
a. Small craft harbor loan	State Department of Boating and Waterways	Marina feasibility studies and marina construction or ex- pansion. Similar program for private marina operators. (If marina is privately operated, only used for non-revenue- producing components.)	---	Up to 100% of project cost. Type: L	Emeryville has received funds.	---
b. Boat launch development grants	State Department of Boating and Waterways	Build or rehabilitate boat launching. Facil- ities must be free to public.	---	Up to 100% of project cost. Type: G	Emeryville has received funds.	---
7. CULTURAL ACTIVITIES						
a. Organizational Grants Program	Organizational Grants Program, California Arts Program	Artistic programs, projects, or special events.	Highly competitive.	Type: G, M (100%)	Cooperative projects with artist community, events at com- munity center.	---
b. Environmental Education	State Department of Education, Environmental- Energy Conser- vation Service	Environmental edu- cation, development: 4 different programs.	Application standards currently being revised.	Type: G	Interpretive programs; special events.	---

G = grant
L = loan

M (50%) = matching (%)
O = other

LG = loan guarantee
C = applications received continuously

A = annual application deadline
2* = 2-year limited program

TABLE D-2: FUNDING PROGRAMS FOR OPEN SPACE/RECREATION (continued)

<u>Project Type</u>	<u>Agency/Program</u>	<u>Purpose/ Eligible Projects</u>	<u>Priorities/ Selection Criteria</u>	<u>Funding Availability and Type</u>	<u>Potential Ap- plication to Emeryville</u>	<u>Example(s) in Adjacent Cities</u>
8. NATURAL RESERVES						
a. Resource enhancement	State Coastal Conservancy	Technical assistance, planning acquisition, improvements.	Address Bay resources, preservation, enhancement, restoration.	Average \$10,000-\$300,000. Type: G	Crescent: removal of garbage, interpretive center, restoration of natural habitat, boardwalk trail through Crescent, interpretive center, Ashby Spit.	---
b. Beach erosion control	State Department of Boating and Waterways	Shoreline protection projects, legislative approval for each grant is required.	Preserve recreational beaches or protect existing development.	Varies.	Riprap, other erosion projects.	---
c. Cooperative projects with local government	Wildlife Conservation Board	Acquisition or improvement. Acquired land is conveyed to Department of Fish and Game. 25-year proprietary interest for improvements.	Preservation of wildlife habitat, recreational fishing.	Average \$10,000-\$500,000. Type: G, M (50%)	Crescent: removal of garbage, interpretive center, restoration of natural habitat, boardwalk trail through Crescent, interpretive center, Ashby Spit.	---
d. Environmental license plate fund	The Resources Agency (State)	Acquisition, restoration of natural areas; legislative approval is required.	Access; environmental education; protection of rare and endangered plants and animals.	Varies widely. Type: G, A (July 15)	Crescent: removal of garbage, interpretive center, restoration of natural habitat, boardwalk trail through Crescent, interpretive center, Ashby Spit.	---
G = grant L = loan M (50%) = matching (%) O = other LG = loan guarantee C = applications received continuously A = annual application deadline 2* = 2-year limited program						

TABLE D-2: FUNDING PROGRAMS FOR OPEN SPACE/RECREATION (continued)

<u>Project Type</u>	<u>Agency/Program</u>	<u>Purpose/ Eligible Projects</u>	<u>Priorities/ Selection Criteria</u>	<u>Funding Availability and Type</u>	<u>Potential Ap- plication to Emeryville</u>	<u>Example(s) in Adjacent Cities</u>
9. OTHER						
a. Private sources	Landowners (Santa Fe), Private Foundations	Acquisition of land, grants.	Coordination with Santa Fe; research at Foundation Center.	Not a grant program; must be negotiated.	South Peninsula; Ashby Spit; varies.	---
b. Public trust	State Lands Commission	Claim public trust over Crescent.	---	Not a grant program; must be negotiated.	Emeryville Crescent.	---
c. Natural disaster assistance	State Office of Emergency Services	Repair public property damaged by natural disaster; will not fund purely recreational facilities unless declared a federal emergency.	Must be declared a local emergency by state. (If declared a federal emergency, state can apply for federal funds.)	Type: G, M (determined by cost-sharing formula)	Repair of storm damage (declared state of emergency).	----
d. Public law 99 program	U.S. Army Corps of Engineers	Repair of flood control works damaged by flood or unusual storm.	Does not give grants for local repair work by U.S. Army Corps of Engineers.	Type: G, O (funds may not be available)	---	---

G = grant
L = loan

M (50%) = matching (%)
O = other

LG = loan guarantee
C = applications received continuously

A = annual application deadline
2* = 2-year limited program

U.S. Fish and Wildlife Service. The U.S. Fish and Wildlife Service (FWS) has expressed a strong interest in the Emeryville Crescent as one of the few remaining tidal marshes in the San Francisco Bay. The FWS would not purchase the land, as it believes the Clean Water Act, BCDC, and the potential public trust easement provide a reasonable degree of protection from non-water development. Because any alteration of the land may affect the tidal marsh, the FWS has requested review of any development proposed near the shoreline. The top priorities for protection by FWS are the rare and endangered species which are known to inhabit the area, migratory bird and fish habitats, and the Bay's ecosystem. Because of the presence of the endangered salt marsh harvest mouse and clapper rail in the Crescent, the FWS recommends against a continuous path through the Crescent and suggests that the driftwood sculptures on the mudflats may be seriously damaging the natural environment essential for the survival of these species.¹

California Department of Fish and Game. This agency would assume management responsibility for the Emeryville Crescent as a wildlife refuge whether another agency acquires it or the public trust is exercised. As a wildlife refuge, the Crescent would not be publicly or privately developed or given extensive public access. The agency remains neutral on the question of whether a bicycle path through the refuge is appropriate; however, a representative notes that in order to manage the area as a wildlife refuge, wildlife and people must be separated. Ideally, the sculpture garden would be removed, but a limited and restricted area for driftwood sculpture could be provided and perhaps improved from its present state by requiring all sculpture to be constructed of natural materials and in natural colors.²

Coastal Conservancy. The Coastal Conservancy, a State agency charged with protection and enhancement of resources in the Coastal Zone and the San Francisco Bay shoreline, may award loans or grants to local, State, or other public agencies, and to non-profit organizations and land trusts, or may undertake projects itself where local agencies are unable to do so. The Conservancy can mitigate some environmental impacts of development projects by providing public access where necessary or desirable.³ The Coastal Conservancy presently is funding shoreline access projects in Berkeley and soon will provide funds to Albany as well.

Bay Conservation and Development Commission (BCDC). BCDC has jurisdiction over lands 100 feet landward of the Bay shoreline. Any development which is proposed within this boundary must be consistent with BCDC's Bay Plan.⁴ The Bay Plan policies that affect Emeryville are as follows:

¹Peggy Kohl, U.S. Fish and Wildlife Service, December 12, 1984.

²Ted Wooster, Environmental Services Supervisor, California Department of Fish and Game, November 16, 1984.

³Peter Brand, Coastal Development Analyst, California Coastal Conservancy, November 26, 1984.

⁴San Francisco Bay Conservation and Development Commission, San Francisco Bay Plan, January 1969, as amended July 1979, September 1983.

Wildlife. Bay Plan Map 4 identifies the Emeryville Crescent as a high-value water-bird habitat and wildlife area. Nothing may be constructed within BCDC's jurisdiction which would be detrimental to the preservation of this area as a wildlife refuge.

Public Access. Public access to the Bay, according to BCDC policies, should serve scenic, recreational and educational purposes. Access should be provided where it will not be detrimental to the purposes of a refuge; although if access is restricted to a less fragile area which still offers views, and an interpretive exhibit illustrating the fragility of the environment is provided, visitors may be less tempted to disturb the wildlife area.¹

Filling. The Bay Plan specifies that the Emeryville area of the Bay should be developed for public and commercial recreation uses and that such development be coordinated with Albany and Berkeley. It notes that "some fill may be necessary to create usable shoreline areas, protected water areas and park space."² The narrow section of the Frontage Road north of the Peninsula would be widened for pedestrians when the bicycle/pedestrian path is constructed, but actual filling of the Bay for this purpose is not anticipated.³

Views. Views of the Bay should be maintained; new development, accordingly, should not create a wall between the Bay and the land.

Appearance, Design and Scenic Views. According to the Bay Plan, "unnatural debris should be removed from sloughs, marshes, and mudflats that are retained as part of the ecological system. Sloughs, marshes and mudflats should be restored to their former natural state if they have been despoiled by human activities."⁴ Although the activities on the mudflats undoubtedly harm the fragile environment, structures like the sculptures draw people to the Bay, which is encouraged by BCDC in most instances. Consequently, BCDC is divided on whether the Emeryville driftwood sculptures should be removed or retained.

Regional Water Quality Control Board (RWQCB). As discussed Appendix F, Water Resources, the RWQCB is responsible for the quality of the water in the greater Bay Area, including San Francisco Bay. Accordingly, the RWQCB has described beneficial uses for the Bay in its 1982 Water Quality Control Plan. These include: non-contact water recreation, wildlife habitat, preservation of rare and endangered species, fish spawning, and estuarine habitat.

East Bay Regional Parks District. The East Bay Regional Parks District (EBRPD) has planned a shoreline bicycle/pedestrian path through Alameda County for the past

¹Nancy Wakeman, Chief of Permits, Bay Conservation and Development Commission, November 16, 1984.

²San Francisco Bay Conservation and Development Commission, San Francisco Bay Plan, January 1969, as amended July 1979, September 1983, Map 4.

³Nancy Wakeman, Chief of Permits, Bay Conservation and Development Commission, November 16, 1984.

⁴San Francisco Bay Conservation and Development Commission, San Francisco Bay Plan, January 1969, as amended July 1979, September 1983, p. 29.

decade, although responsibility for implementation of this plan has never been identified. The concept of the plan is similar to that proposed for the East Bay Shoreline Park under the State Department of Parks and Recreation. The EBRPD is not currently planning any acquisition for construction of the path; however, it would oversee maintenance and operation if one were constructed.

Alameda County. The County, in its General Plan, recommends that natural areas be assessed for their resource sensitivity and vulnerability to development impacts. It also recommends that the EBRPD or Federal and State agencies acquire "for public management those environmental resource areas which are of critical countywide, regional, statewide, or national significance, including important wildlife habitat areas, watersheds and ground water basins, and areas providing or having the potential to serve outdoor recreation needs."²

City of Berkeley. Berkeley's waterfront area plays a major role in plans for the East Bay Shoreline Park. The City currently is conducting a planning study for development of the waterfront area.

City of Oakland. The Oakland General Plan proposes a bicycle/pedestrian path through the Emeryville Crescent. The plan asserts that the path would not be inconsistent with a wildlife refuge.

Port of Oakland. A portion of the land in the Emeryville Crescent, outside of Emeryville itself, lies within the jurisdiction of the Port of Oakland. It is designated for recreational uses in the Port's shoreline plan, although the north harbor site is proposed as a future shipping terminal. The construction of this project would require landfill and is contingent on a permit from BCDC.

Private Organizations. The Audubon Society, in conjunction with the Bodega Bay Institute, sponsored an exhaustive study of the Emeryville Crescent ecology.³ The Golden Gate Chapter of the Audubon Society opposes the bicycle path, contending that the public access such a path would provide is inappropriate for a fragile area. In particular, the presence of people and their pets in the Crescent would seriously disturb the clapper rail habitat. To protect the area, the Audubon Society calls for the removal of the driftwood sculptures to the area north of Temescal Creek, restricted access south of this area,⁴ and construction of an interpretive exhibit demonstrating the ecology of the area.

The Sierra Club has collaborated with the Golden Gate Audubon Society, Save San Francisco Bay Association, League of Women Voters, and Citizens for Eastshore State Park to seek State funding and assistance in implementing the State East Bay Shoreline Park proposals.

¹Peter Koos, Senior Landscape Architect, East Bay Regional Parks District, November 9, 1984.

²County of Alameda, General Plan for the Central Metropolitan, Eden and Washington Planning Units, January 1981 p. 25.

³Bodega Bay Institute, The Crescent: An Environmental Assessment of the Emeryville Crescent, Golden Gate Audubon Society, 1978.

⁴John Zublackis, Past President, Golden Gate Audubon Society, December 12, 1984.

APPENDIX E: AIR QUALITY

Federal air quality standards are classified as primary and secondary standards. Primary standards seek to protect human health; secondary standards are designed to protect not only human health but property and the appearance of the air.

Local Air Quality

Brief summaries of Bay Area air quality levels for each of the five pollutants for which Federal standards have been established are provided below.¹ Standards were not exceeded for any of the pollutants at Oakland or Richmond, the two monitoring stations closest to Emeryville, in 1984, the latest year for which information is available. In general, the Oakland monitoring station has not exceeded standards for most of the past six years.

Ozone. In 1982, the BAAQMD's 21 ozone stations recorded the fewest exceedances in 21 years of recording, with 5 days over the Federal 0.12 parts per million (ppm) standard. The Federal standard is applied to an estimate of the average number of days per year with concentrations above the standard in the last three years. This is called the expected number of annual exceedances (EAE). A site is in compliance if its EAE does not exceed 1.0. The Emeryville area EAE is 0.

Carbon Monoxide. Over 90% of the Bay Area's carbon monoxide (CO) is emitted from vehicular sources. Federal and State one-hour CO standards have not been exceeded in the current decade. The Federal eight-hour standard of 9 ppm has been frequently exceeded in San Jose and Vallejo. Emeryville's eight-hour CO emissions are between 3 ppm and 6 ppm. Local exceedance of standards can potentially occur where traffic is congested and cars are idling for long periods of time.

Total Suspended Particulates. The annual geometric means show a pattern of low values near the coast, increasing with distance inland, particularly into dry sheltered valleys. There are two Federal 24-hour standards for total suspended particulates (TSP) that are not to be exceeded more than once a year: 260 and 150 micrograms per cubic meter correspond to the primary and secondary standards, respectively. The 1984 value in the Emeryville area was 56 micrograms per cubic meter.

Sulfur Dioxide. The Federal standard for sulfur dioxide is 30 parts per billion (ppb) on an annual average. Most of the Bay Area has less than one-sixtieth of the levels allowed. Levels near Emeryville in 1984 were less than 16 ppb.

Nitrogen Dioxide. Nitrogen dioxide is a major ingredient in the formation of photochemical smog and creates a brown discoloration of the air. A State one-hour standard of 25 parts per hundred million (pphm) has been established at the level where the discoloration just becomes visible. The Federal standard is an annual average of

¹ Association of Bay Area Governments, Bay Area Air Quality Management District, Metropolitan Transportation Commission, San Francisco Bay Area Annual Air Quality Report for 1982, October 1983; Bay Area Air Quality Management District, Air Currents, Vol. 29, No. 4, April 1985.

5.0 pphm. The San Francisco-Oakland area, which includes Emeryville, experienced 1984 annual average nitrogen dioxide values of less than 2.5 pphm.

Local Point Sources of Pollutants

Direct sources of air pollutants are vents and stacks that release gases or particles directly to the atmosphere. Any land uses that contain such sources (restaurants or dry cleaning operations, for example) would be subject to the rules and regulations of the Bay Area Air Quality Management District. District regulations require all sources to obtain permits prior to construction and prior to operation. As part of the permit process, an analysis is required, demonstrating that a given source meets the District's emission limitations and control requirements, and would not result in violations of any ambient air quality standard.

Major Emitting Facilities. Major facilities emitting significant amounts of air pollutants are listed in the Base Year 1982 Emissions Inventory published in November 1983. Table I identifies those facilities and their average emissions for 1982. Inclusion on this list does not imply violation of air quality standards; information on exceedances of emissions standards at point sources is unavailable.¹

Future Air Quality Issues

Traffic generated by the proposed land uses would have an indirect impact on both local and regional air quality. The local effect would be increased carbon monoxide levels along roadways used by project traffic. Concentrations of this pollutant have been predicted at five intersections under worst-case assumptions for traffic and meteorology with the proposed land uses. Because these intersections are a focus of traffic and congestion, these concentrations should represent the highest occurring in the vicinity.

Table H-2 shows the results of the intersection analysis for the peak 1- and 8-hour traffic periods. The 1-hour values are to be compared to the Federal 1-hour standard of 35 ppm (parts per million) and the State standard of 22 ppm. The 8-hour values are to be compared to the State and Federal standards of 9 ppm. The analysis assumes build-out by the year 2000, and assumes that all recommended roadway and intersection improvements also are constructed by that time. Table 2 shows potential local violations of the 8-hour standard near the Powell Street interchange with Interstate 80.

The regional effects of the proposed land use modifications would be related to the vehicle miles traveled (VMT) associated with project traffic. VMT has been predicted for the proposed land use modifications using a calculated average trip length of 6.2 miles. The General Plan is estimated to generate a regional VMT of 161,000 and result in the additional daily regional emission of:

- 4,400 lbs./day of carbon monoxide;
- 410 lbs./day of hydrocarbons;

¹ Bob Card, Field Inspector, Bay Area Air Quality Management District, December 5, 1984.

TABLE 1: MAJOR FACILITIES EMITTING AIR POLLUTANTS

<u>Facility</u>	<u>Average Annual Emissions (tons/day)</u>
Clearprint Paper Company	.09 Total Organics
Judson Steel Corporation	.08 Nitrogen Oxides .11 Carbon Monoxide
Myers Drum Company	.08 Total Organics
Pfizer Chemical Incorporated	.02 Particulates .09 Nitrogen Oxides .02 Carbon Monoxide

Source: Bay Area Air Quality Management District, Base Year 1982 Emissions Inventory Summary Report, November 1, 1983, pp. 22, 26-27, 29.

TABLE 2: PREDICTED WORST-CASE CARBON MONOXIDE CONCENTRATIONS

<u>Intersection</u>	<u>Roadside Concentration (in ppm)</u>	
	<u>1-Hour Average</u>	<u>8-Hour Average</u>
Christie/Powell	11.7	8.0
Powell/I-80 northbound on-/off-ramps	17.3	11.9*
Bay/65th	8.5	5.8
Ashby/Bay	12.4	8.5
Ashby/I-80 northbound on-/off-ramps	12.2	8.4
Federal Standard	35.0	9.0
State Standard	20.0	9.0

*Exceeds State and Federal Standards.

Source: Donald Ballanti

- 459 lbs./day of nitrogen dioxide;
- 15 lbs./day of sulfur dioxide; and
- 831 lbs./day of particulates.

Of the pollutants shown above, hydrocarbons and oxides of nitrogen (ozone precursors) are the most significant due to the persistent ozone problem in the Bay Area. Due to travel patterns and regional wind patterns, project emissions would primarily affect areas east and south of the site.

The above additional emissions would result in a degradation of regional air quality. However, because they would occur over a large geographical region, no measurable change in air quality would be expected from the project.

An efficient circulation system and a highly developed public transportation system can reduce the adverse effects of increased growth on air quality. Air quality is often regarded as a regional problem; yet land use and growth decisions made at the local level will have an effect on the success of any regional plan in combatting air pollution. The land use, economic development, transportation, energy, and environmental resources policies of this plan are interrelated with those of air quality. Protection of air quality can be achieved by the following factors, which are influenced by policies in the aforementioned elements:

- balancing growth rates with improvements to the transportation system;
- reducing long-distance commuting;
- increasing use of public transit, carpools, and vanpools; and
- increasing bicycle and pedestrian travel.

Caline 3 Model and Assumptions

A model called Caline 3 was used to derive the carbon monoxide concentrations in Table 2. Normalized concentrations generated by the Caline 3 model were adjusted for the appropriate emission factor (a function of average vehicle speed) and hourly traffic volumes. The Caline 3 model is a third-generation line source air quality model that is based on the Gaussian diffusion equation and employs a mixing zone concept to characterize pollutant dispersion over the roadway. Given source strength, meteorology, site geometry and site characteristics, the model predicts pollutant concentrations for receptors located within 150 meters of the roadway or intersection.

The following variables were specified as worst-case conditions for a 1-hour average concentration:

- windspeed of 1 mph.
- wind blowing at an angle of 22 degrees to the road with the greatest traffic.
- stable atmospheric conditions (Pasquill E)
- background level of 5.4 ppm in 2000
- mixing height of 100 meters.
- receptor 25 feet from the curb.

Eight-hour concentrations were generated by adjusting the 1-hour concentrations for:

- traffic volume of 55% of the ADT.
- background level of 3.6 ppm.

Emission factors were provided by the Bay Area Quality Management District for a typical Bay Area vehicle mix. Vehicle speeds were assumed to be related to Level of Service, with LOS A-C associated with a 15 mph average speed, LOS D-E associated with 10 mph, and LOS F associated with a 5 mph speed.

APPENDIX F: ENERGY

Defining the Energy Problem

In the 1970s, the discussion and debate surrounding the energy crisis focused national attention on the world's precarious dependence on and rapid depletion of supplies of fossil fuels. Short-term crises such as the gasoline shortage and rising costs of energy produced an awareness within the Federal government of the longer-term imperative for conservation and for development of alternative, preferably renewable energy sources. The Federal government has since relinquished the lead in solving the nation's energy problems and is only beginning to acknowledge the value of passive solar building design, although it has long been known to be the most cost-effective way to reduce a building's energy use. Implementation of regulations at this level is difficult to achieve.

At the State level, the California Energy Commission initiated the first efforts to increase energy efficiency by developing regulations for new residential buildings and appliances. However, regulations and programs from this level of government are implemented slowly. Furthermore, legislation must apply to the whole state and, once approved, must still be refined to fit the unique conditions of each locality.

Energy consumption occurs in all aspects of daily life. Energy is needed to supply material goods such as food, clothing, and housing; to heat and cool buildings; to provide transportation; and to operate machines and equipment. Existing and potential sources of energy and patterns of energy use must be identified in order to reduce the use of energy resources, particularly non-renewable resources, at the local level.

Like each new area of concern that demands the attention of local government, the energy field requires an understanding of a new body of information. Basic definitions and concepts are clarified below, in order to define the problem and identify solutions to it.

Energy Sources. With the exception of solar and hydroelectric power, most conventional energy is derived from non-renewable sources such as oil, natural gas, coal, and uranium. By definition, the supply of non-renewable energy sources is finite. Renewable energy sources consist of energy derived directly or indirectly from the sun, such as sunlight, wind, bio-mass (plant material), or moving water (hydroelectric power). In contrast to non-renewable energy sources, these supplies will not be depleted.

Energy can be disaggregated into primary, delivered, and end-use energy. Primary energy includes the energy used to convert fuel into electricity and the energy that is lost in the transmission of electricity to its users, or the conversion of primary energy into electricity. Only about 30% of the energy that is generated actually makes it to the consumer; the rest is lost. When production and transmission losses are excluded, energy consumption is referred to as delivered energy, i.e., the energy actually delivered to the consumer to meet his or her end-use demand. The end-use demand is the energy actually required to accomplish a given task.

Energy Consumption. Energy consumption may be described as both embodied and operational consumption. Embodied, or indirect, consumption represents the one-

time investment of energy which is bound into materials and goods during the manufacturing or construction process. For example, the energy embodied in a house includes the energy used to harvest, mill, and transport lumber; to produce and transport masonry; and to transport workers to and from the construction site. Operational, or direct, energy consumption is the energy consumed in day-to-day space and water heating, cooling and lighting of buildings, and movement of people and goods.

Energy Cost. The cost of energy can be understood in "dollar" and "non-dollar" terms. The dollar costs, usually the basis of most conventional economic arguments, include those direct costs to individual consumers and businesses for utilities and gasoline, as well as the initial investment made in solar or conventional heating systems. Non-dollar costs of conventional energy sources include threats to environmental quality and human health from production processes, over-reliance on large, technically complex central electrical power plants and transmission systems, and depletion of finite, non-renewable resources. Some of these non-dollar costs may result in dollar costs as well. Because of the payback lag, there is a tendency in energy planning to focus on the short-term dollar costs of making the transition from non-renewable to renewable energy sources, and not to take sufficient account of either the non-dollar costs or the long-term dollar costs of developing and operating non-renewable energy resources. In fact, all energy conservation techniques and capital expenditures which help to shift the consumption pattern from non-renewable to renewable energy sources represent both direct dollar savings as well as non-dollar savings. Continued dependence on primarily non-renewable energy sources will result in both dollar and non-dollar losses.

Energy Consumption

Table 1 shows the amount of electricity and natural gas consumed by nonresidential users in Emeryville for the years 1982 through 1984. No data is available on residential use patterns. The overall consumption of both gas and electricity during this period increased by 18 percent. The largest growth was demonstrated in the manufacturing sector, where consumption increased by nearly one-quarter during the three-year period. Accompanying the increases in consumption was a slight decrease in overall consumption by the construction industry, which reflects an industrywide slump during the period.

Increased growth within the City will result in increased energy use. Based on the growth which is expected under the Land Use Element, the increase in the amount of energy consumed over the next 20-30 years could reach 1,832 kBTU per year, as shown in Table 2.

As Table 3 indicates, motor vehicle fuel consumption in the City, which is presently estimated to be about 20,000 gallons per day, is expected to show a decrease in the future, in spite of increased development and a concurrent rise in the number of automobile trips, because vehicles are expected to be more fuel-efficient in the future.

TABLE 1: EMERYVILLE ENERGY USE 1982-1984

SIC CODE	CONSUMPTION (x 100,000)						% Change in Consumption 1982-1984	
	1982		1983		1984			
	THERM ¹	KWH ²	THERM	KWH	THERM	KWH	THERM	KWH
Unknown	86	275	79	430	94	1,593	9	79
00	0.8%	0.2%	0.7%	0.3%	0.7%	1.2%		
Construction	28	5,608	23	5,614	19	5,440	-32	-3
15-17	0.3%	4.8%	0.2%	4.5%	0.1%	3.9%		
Manufacturing	9,545	75,281	9,571	82,231	11,516	93,092	21	24
20-39	86.4%	64.7%	85.4%	65.5%	88.4%	67.6%		
Util./Trans.	402	7,346	364	7,899	377	7,565	6	3
41-49	3.6%	6.3%	3.2%	6.3%	2.9%	5.5%		
Wholesale	108	4,000	99	4,601	99	4,429	-8	11
50-51	1.0%	3.4%	0.9%	3.7%	0.8%	3.2%		
Retail	385	7,611	366	8,027	368	7,817	-4	3
52-59	3.5%	6.5%	3.3%	6.4%	2.8%	5.7%		
F.I.R.E.	162	8,685	124	9,030	132	9,828	-19	13
60-65	1.5%	7.5%	1.1%	7.2%	1.0%	7.1%		
Services	315	7,244	569	7,420	412	7,723	31	7
70-89	2.9%	6.2%	5.1%	5.9%	3.2%	5.6%		
Public Admin.	15	221	16	283	14	268	-7	21
91	0.1%	0.2%	0.1%	0.2%	0.1%	0.2%		
TOTAL	11,048	116,272	11,211	125,535	13,031	137,755	18	18
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%		

¹Natural Gas²Electricity

Source: Pacific Gas and Electric Company.

TABLE 2: ENERGY CONSUMPTION

New Dwelling Unit Use Factors: ¹	Additional Energy Use
Gas usage/average: 36,300 BTU/yr	(kBTU/yr x 1,000,000):
Space conditioning average: 20 kBTU/sf/yr	Office: 648.4
Water heating average: 12,300 kBTU/yr (multi-family)	Retail: 465.4
Average unit size: 1,200 sf/unit	Residential: 175.7
	Industrial: 542.8

Non-Residential User Factors:²

Maximum allowable/yr—office: 130 kBTU/sf (gross)/yr
 Maximum allowable/yr—retail: 180 kBTU/sf (gross)/yr
 Industrial: 170 kBTU/sf (gross)/yr

¹California Energy Commission, Energy Conservation Standards for New Residential Buildings, August 1981.²California Energy Commission, Conservation Division Regulations Establishing Energy Conservation Standards for New Nonresidential Buildings, February 1980.

Source: City of Emeryville, Emeryville Redevelopment Agency, Final Environmental Impact Report on the Amended Redevelopment Plan for the Emeryville Redevelopment Agency of the City of Emeryville, August 1983.

TABLE 3: MOTOR VEHICLE FUEL CONSUMPTION

	1985	1990	2005
Daily Number of Trips	7,526 ¹	5,638 ²	11,275 ³
Average Trip Length, miles (one-way)	7	7	7
Fuel Efficiency, miles per gallon	17.5 ⁴	27.5 ⁵	40.0 ⁶
Total Fuel Consumption, gallons per day	3,010	1,435	1,973

¹Data from Final EIR on the Redevelopment Plan, August 1983.²Reflects 50% build-out (actual rate of development depends on market conditions).³Reflects 100% build-out (actual rate of development depends on market conditions).⁴1980 estimate.⁵EPA National Standard for 1990.⁶California Energy Commission Projection of a Market-Induced Standard.

Source: City of Emeryville, Emeryville Redevelopment Agency, Final Environmental Impact Report on the Amended Redevelopment Plan for the Emeryville Redevelopment Agency of the City of Emeryville, August 1983.

APPENDIX G: NOISE

The amount of noise heard in an environment varies over time: trucks may pass by only in the morning; a steady hum may be heard from a freeway or from a creek; a dog may bark intermittently. A number of different descriptors are used to characterize noise according to these time variances and the differences in people's responses to daytime and nighttime noises.

- **L₁₀:** the A-weighted sound level equaled or exceeded 10% of the sample time. The L₁₀ is considered a good measure of the "average peak" noise. Similarly, L₅₀ is the A-weighted sound level equaled or exceeded 50% of the time. This would represent the median sound level. L₉₀ is the A-weighted sound level equaled or exceeded 90% of the time. L₉₀ is used to describe background noise. Federal highway noise guidelines are expressed in terms of these descriptors.
- **Leq:** the equivalent energy level. This corresponds to the steady-state sound level which, in a stated period of time, would contain the same total energy as a time-varying signal. The Leq is useful in describing the subjective change in an environment where the source of noise remains constant but the level of activity changes (for example, if the amount of traffic increased).
- **Ldn:** the day-night average level. This descriptor is the A-weighted average sound level during a 24-hour period, with noise occurring during the period from 10:00 p.m. to 7:00 a.m. adjusted upward by 10 dB to account for human sensitivity to nighttime noise.
- **CNEL:** Community Noise Equivalent Level. This descriptor is similar to the Ldn, except that it separates the day into three segments. Sound levels measured between 7:00 p.m. and 10:00 p.m. are adjusted upward by 5 dB; sound measured between 10:00 p.m. and 7:00 a.m. are adjusted upward by 10 dB.

Point Sources of Noise and Spot Measurements. To determine the actual noise levels in Emeryville and to correlate those levels with theoretical estimates, 15-minute noise measurements were conducted at several locations in the City, as shown on Figure V-4 in the Plan. A 24-hour noise measurement was made at one location. Noise was measured in residential areas near industrial noise sources or where land use conflicts due to high noise levels might arise as the General Plan is implemented. The following descriptions summarize the results of noise measurements and report the measured Leq recorded during that period.

1. **Wonder Bread Plant.** This plant is located on Adeline Street between 46th and 53rd Streets. The major noise sources are two exhaust fans located on the south side of the plant along 46th Street. The fans are located about 170 feet east of the center line of Adeline Street. The Leq measured on the southeast corner of Adeline and 46th Streets over a 15-minute period was 64 dBA. Homes directly across from the plant on the west side of Adeline are exposed to noise generated by the fans at levels between 50 and 53 dBA. Other noise sources in the area are distant traffic on the freeway and an occasional whistle from the plant across the street.

2. 43rd Street at Salem Street. Noise at this location is predominantly due to traffic. The noise level recorded was an Leq of 64 dBA. Maximum sound levels from trucks and buses reached 80 dBA. There was one jet flyby and a motor-cycle during the measurement period.
3. 45th Street between San Pablo Avenue and Salem Street. This is a predominantly residential area. Noise is due primarily to automobile traffic. Noise levels ranged from 59 to 69 dBA. Distant traffic was also audible from San Pablo Avenue, along with some faint noise from a loudspeaker paging system at the Berkeley Farms Dairy Plant on the northeast corner of San Pablo and 45th Streets.
4. 47th Street between Salem and Adeline Streets. This also is a predominantly residential area, and noise levels are due primarily to automobile and truck activity. During the recording interval, there were nine automobiles and two trucks. Noise levels ranged from 58 to 72 dBA. Several aircraft flybys were recorded at levels ranging from 56 to 58 dBA, as well as some faint industrial noise. The Leq measured during the period was 55 dBA.
5. San Pablo Avenue between 45th Street and Park Avenue. The measurement at this location was made in front of a residence on San Pablo Avenue, which is one of two major north-south arterials in the City. Most other buildings near the measurement locations were commercial establishments. Major noise sources were automobiles, trucks and buses. Noise levels ranged from 65 dBA to a maximum noise level of 76 dBA. The Leq measured during the period was 65 dBA.
6. 53rd Street at Boyer. This area is predominantly residential with a nearby school and playground. The Leq measured during this 15-minute period was 60 dBA. Noise was predominantly due to automobile and truck traffic. Other contributing noise sources were some jet aircraft flybys and children playing in the playground. The noise levels in this area are typical of the residential locations in the southeastern portions of Emeryville.
7. Yerba Buena Avenue Between Hollis Street and San Pablo Avenue. The measurement location in this predominantly industrial area was adjacent to a truck yard. The major noise sources in this area are automobiles and trucks on Interstate 580, which is located approximately 600 feet south of the measurement location. There were several truck passbys on Yerba Buena Avenue, with noise levels ranging from 70 to 81 dBA. The Leq measured during the 15-minute period was 65 dBA.
8. Interstate 580. The measurement was made at the parking lot of a distribution warehouse west of Yerba Buena and Hollis Streets in a predominantly industrial area. The freeway is elevated 20 feet above the grade of the parking lot with most of the traffic shielded from the line of sight¹ from the measurement location. During the interval, an Leq of 66 dBA was recorded. This was

¹As the term implies, the "line of sight" means direct view of the noise source with no visual obstructions. These visual obstructions are also acoustical obstructions; traffic which is not shielded from the line of sight would be noisier than traffic which is shielded.

primarily due to truck and automobile traffic on the freeway. During the measurement, there were two jet aircraft flybys with maximum levels of 70 and 72 dBA.

9. Park Avenue Between Horton Street and Hubbard Street. This measurement location contains mainly industrial and commercial uses. The major noise sources are automobiles and trucks on Park Avenue. Typical noise levels range from 60 dBA for automobiles to nearly 80 dBA for trucks. Distant industrial equipment noise also was audible. The Leq measured at this location was 64 dBA.
10. Pfizer Chemical. Noise measurements were made near Powell and Shellmound Streets to determine noise levels from the Pfizer Chemical plant. Although traffic noise dominated the measurements, with an Leq of 71 dBA, noise emanating from an exhaust fan above the chemical plant was audible, and the sound level of the fan was approximately 60 dBA. During the daytime hours, this noise is partially masked by the elevated traffic noise levels in the area. According to a plant engineer, a silencer is to be installed in the near future.
11. Powell Street at Christie Avenue. Powell Street is the major access point in to the City from Interstate 80. Land uses on the street are primarily commercial. Noise is due primarily to automobile and truck traffic. Truck noise levels measured during the 15-minute period ranged from 80 to 82 dBA. Noise was also audible from the distant Pfizer Chemical plant and, to a lesser extent, a distant compressor. At the measurement location, there was a line of sight to Interstate 80. The Leq measured during the 15-minute period was 71 dBA.
12. Hollis Street Between 62nd and 63rd Streets. This measurement location was located in a predominantly industrial area. The major noise sources were automobiles and trucks. The sound from several trucks was recorded during the measurement period; maximum noise levels ranged from 70 to 84 dBA. Also recorded during this measurement were buses, motorcycles and one jet aircraft flyby. The Leq measured was 63 dBA.
13. Liquid Sugar Industries (LSI). A noise measurement was made on Ocean Avenue between Vallejo and Doyle Streets. Although residents indicated the area was noisy due to the LSI plant, noise measurements revealed an Leq of 56 dBA, mostly due to traffic along Ocean Avenue, and a liquid oxygen plant 3 blocks east of the measurement location. Noise from LSI was limited to a faint hum from storage tanks, where noise levels up to 50 dBA were due to the release of gases from the tanks. Other noise in the area was due to helicopters (71 dBA) and a distant jet (64 dBA).
14. Bay Street Between 65th and 66th Streets. The measurements in this industrial area were made approximately 80 feet from the Southern Pacific Railroad line. Major noise sources were automobiles and sparse truck traffic. Jet aircraft flybys were also audible and ranged from 69 to 75 dBA. The Leq measured at this location was 66 dBA. Although no train passbys did occur during the measurement, noise levels up to 90 dBA could be expected due to the train horns. Since 12 trains are expected on these tracks during a 24-hour period, the trains are a significant noise source.
15. 64th Street at Christie Avenue. This area is a commercial and industrial area. Christie Avenue is the major connection to Powell Street from this area, and

there was traffic moving from 64th Street to Christie Avenue during the measurement period. Distant traffic from Interstate 80 was also audible. At the measurement location, the freeway was visible but partially shielded from nearby buildings. Although maximum noise levels ranged from 62 to 77 dBA due to traffic along 64th Street and Christie Avenue, most of the noise was due to the constant hum of traffic on Interstate 80. The Leq measured during the period was 56 dBA.

16. Interstate 80. This is Emeryville's major noise source. To ensure that it would be accurately recorded, a 24-hour measurement was made 80 feet from the right-of-way fence on the east side of the freeway. Due to heavy vehicle traffic, the hourly Leq never dropped below 70 dBA at any time during the 24-hour period. The Ldn recorded at this location was 80 dBA. The measurement was made in an industrial area that is predominantly characterized by truck yards.

California law requires the use of either the Ldn (day-night average level) or the CNEL (community noise equivalent level) to describe the community noise environment. Both descriptors adjust measurements upward for periods when the community would be more sensitive to noise. The Ldn descriptor separates the day into daytime and nighttime periods, adjusting measured noise during nighttime periods. The CNEL accounts for a daytime, evening, and nighttime period and adjusts the latter two. These two noise descriptors are very similar, and for all practical purposes the measurements obtained from the two systems are the same. The Emeryville General Plan uses the Ldn measurement system. The national trend is toward the use of this descriptor, and it is recommended by the EPA.

Noise Abatement Measures

The goal of noise abatement is primarily to keep noise below levels which are disturbing or distracting. The standards of Table V-4 (Noise/Land Use Compatibility) in the General Plan describe sound levels which are acceptable for the given activities. In large part, these standards are based on the relative intrusiveness of the sound (i.e., the level over the ambient sound level, the tonal quality, duration and character of the sound) and the need for and ability to carry on a conversation in the presence of the noise. Table I illustrates how noise levels affect face-to-face communications in a normal speaking voice.

Noise can be controlled at the source or at the receiver. Common sources of noise in the Emeryville Bayfront are freeway and local road traffic, rail operations, industrial activities, and aircraft flyovers. Sensitive receivers include residential uses, hotels, hospitals, schools, libraries, churches, parks and some entertainment uses. The following summary of noise sources and potential measures to reduce noise at sensitive receptors is a general description. Not all of the measures identified are economically feasible or directly applicable to Emeryville.

Controlling Noise at the Source

Traffic Noise. Highway and local roadway traffic noise tends to be the most prevalent source of noise. There are three general principles applicable to traffic noise reduction. The first is control of noise for individual vehicles. This is beyond the scope of Emeryville's control except for local enforcement of the Vehicle Code.

The second is controlling traffic, which includes routing traffic through areas which are not noise-sensitive. This can be accomplished through local roadway design and designation (e.g., arterial versus collector).¹

The third principle concerns highway and roadway design. Noise intensity can be affected by: adjustments in gradient, depression or elevation of roadway, road-surfacing materials, traffic flow, and noise shields. Noise shields include buildings which are located between the noise receptor and noise source, and barriers, such as noise walls, earth berms and, to a lesser degree, plantings. Plantings are only effective if the growth is dense and the foliage is tall enough to block the "line of sight" to the receptor and deep enough to block some of the sound. The effectiveness of structural barriers are dependent on the acoustical characteristics of the construction material, the thickness and height of the barrier, the amount of diffraction at the top of the barrier, and the distance from the noise source to the barrier and to the noise receptor.

Most of these noise attenuation measures could be implemented by agencies other than the City. Caltrans, for example, could include some of these features in the improvements scheduled for the I-80 freeway; however, this would take some effort on the part of the City and coordination with Caltrans, since the I-80 freeway improvement proposals do not presently account for the possibility of residential construction adjacent to the freeway. Improvements to local roads, such as construction of earth berms, could be implemented by the City.

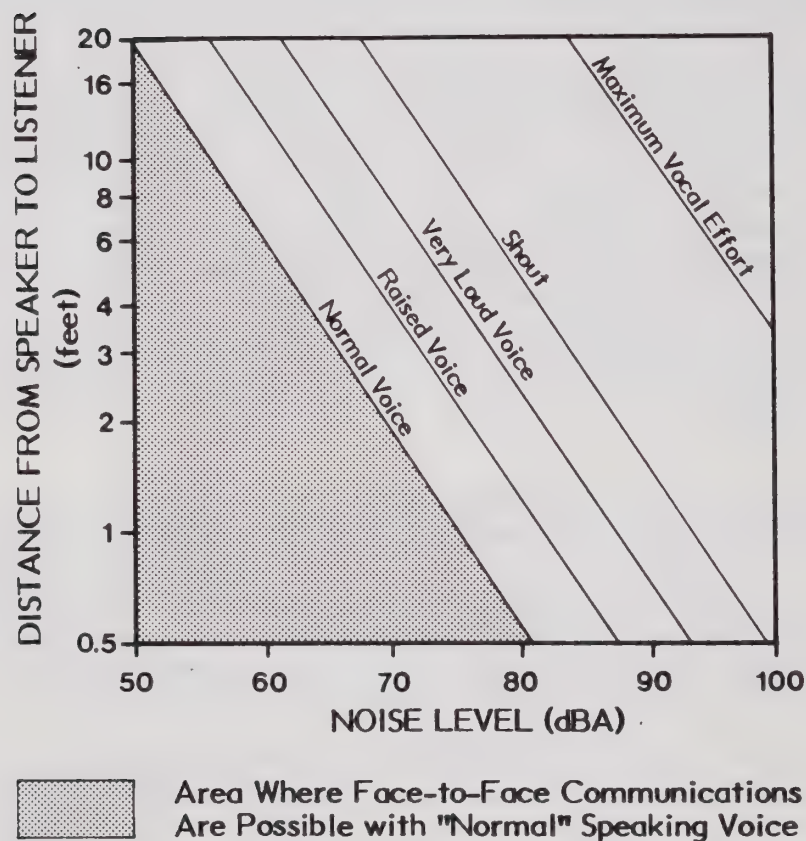
Rail Operations. Rail noise originates from the contact between the wheel and the rail, the propulsion system or the horns. Wheel/rail noise, commonly characterized as squeal (sticking and slipping of the wheel on the rail), impact (caused by discontinuities in the surfaces of the wheel or the rail), and roar (due to small-scale roughness on the surface of wheels and rails) can be reduced by lessening rail vibrations, elimination of rail joints, maintenance to keep rail joints in proper alignment, and routine machining and truing of rail and wheel surfaces. Certain other structural changes can accomplish noise reductions. These include ballast, which consists of crushed rock placed between the track and the roadbed; resilient rail fasteners, or the placement of a resilient layer of material between track and roadbed to reduce vibration; and resiliently mounted "floating slab" track beds. Noise from the propulsion system would be reduced through technological changes; and horn noise is affected operations. Most of these measures are out of the scope of the City's power.²

Industrial Activities. Some industrial operations are a direct source of noise. Silencers can in some cases be installed, such as is planned for the Pfizer operations. Industrial sources of noise have not been shown to be a serious problem in the Bayfront.

¹Abstracted from Engineering Corporation of America, Noise Abatement Barrier Study, February 1975.

²Abstracted from U.S. Department of Transportation, Urban Mass Transportation Administration, Urban Rail Noise Abatement Program Digest, May 1980.

TABLE 1: VOICE LEVELS AND
SPEECH COMMUNICATION



Source: U.S. Environmental Protection Agency, Fundamentals of Noise: Measurement, Rating Schemes, and Standards, December 1971, p. 29.

TABLE 2: APPROXIMATE NOISE REDUCTION PROVIDED BY BUILDINGS

Building Type	Noise Reduction due to Building Structure (dBA)
All	10
Light frame, closed windows	20
Masonry, single-glazed windows	25
Masonry, double-glazed windows	35

Portion of Exterior Wall with Open Windows	Noise Reduction of Wall (dBA)
1%	17
2%	14
4%	11
8%	8
16%	5
32%	2
50%	0

Source: Federal Highway Administration (Bolt Beranek and Newman, Inc.), Fundamentals and Abatement of Highway Traffic Noise, June 1973, p. I-35.

Aircraft Flyovers. Flyovers of jet aircraft have been noted in the Emeryville Bayfront, but this is not a pervasive source of noise for this area. Control of future problems could be accomplished through coordination with the Alameda County Airport Land Use Commission.

Controlling Noise at the Receptor

As illustrated in Table 2, standard building construction provides some noise reduction from outside to inside. At least this amount of noise reduction is implied in the compatibility standards of Table V-4 of the Plan. Further noise reduction can be provided by site planning, architectural design and acoustical construction which seeks to minimize the noise reaching sensitive receptors within a site or building.

Site Planning. The arrangement of buildings on a site can be used to minimize noise impacts. These include:

- increasing the distance between the noise source and the receiver;
- placing non-residential land uses such as parking lots, maintenance facilities, and utility areas between the source and receiver;
- locating barrier-type buildings (i.e., less noise-sensitive buildings) parallel to the noise source or highway;
- orienting the noise-sensitive areas away from the noise.

These techniques can often be implemented through cluster developments. Doubling the distance from a noise source can reduce its intensity by as much as 6 dBA. Noise compatible land uses such as commercial activities can act as buffers, both by distance and by use of the buildings as noise shields. A study has shown that a two-story building can reduce noise levels on the side of the building away from the noise source by about 13 dBA. Buildings can be oriented in such a way to reduce noise. This is effective in shielding open space areas from the noise source.

Architectural Design. Noise impacts can be reduced by separating more noise-sensitive rooms from less noise-sensitive rooms, and locating the more noise-sensitive rooms furthest away from the noise source. In residences, bedrooms, living rooms and dining rooms are most noise-sensitive; kitchens and bathrooms are less so.

Solid walls or reduced window areas in the area of the noise source can cut down on the amount of noise reaching the receiver. Windows can be kept closed, although this is often highly undesirable for some residential uses. The design of balconies should be given some consideration, as improper design can cause noise to reflect into the building.

Acoustical Construction. Noise can be intercepted as it passes through the walls, floors, windows, ceilings and doors of a building. Walls provide building occupants

¹ Abstracted from U.S. Department of Transportation, Federal Highway Administration, Offices of Research and Development, The Audible Landscape: A Manual for Highway Noise and Land Use, November 1974.

with the most protection from exterior noise. The amount of noise protection can be increased by increased wall mass and stiffness, use of cavity partitions, increased airspace, increased stud spacing, use of staggered studs, use of resilient materials to hold the studs and panels together, addition of acoustical blankets, and sealing of cracks and edges.

Windows are one of the acoustically weakest points of a wall. Reduced window size, increased glass thickness, and use of double-glazed windows will decrease the amount of noise entering through windows. Some windows are sound attenuating even while open.

Doors are acoustically weaker even than windows, and represent a more difficult problem in terms of noise attenuation. Hollow core doors are discouraged in favor of solid core doors. Vinyl seal around the edges, gasketed stops or drop bar threshold closers can further reduce sound penetration. Floors and ceilings do not normally need to be acoustically treated; beamed ceilings, however, are acoustically weak and could be modified by the addition of a layer of fiberglass or some other noise-resistant material.

Overall interior noise levels can be reduced by extensive use of thick, heavy carpeting, drapes, wall hangings, and acoustical ceiling tiles. They cannot reduce the sound entering the building but they can reduce overall noise levels by reducing sound reverberations. Psychological noise attenuation can be accomplished by masking the noise. Techniques include air conditioning and heating systems, music, the sound of running water, or anything which reduces the perceived fluctuations in noise.

Barriers. A noise barrier is an obstacle placed between a noise source and the "line of sight" of the receiver to interrupt the path of the noise. They can be constructed of several different substances or combinations of substances, such as earth berms, walls and fences, or dense plantings of shrubs and trees.

A berm can provide noise attenuation of up to 15 dBA if it is several feet higher than the "line of sight" between the noise source and the receiver. Walls can serve the same function, reducing noise as much as 15 dBA. As mentioned earlier, landscaping is not a very effective method of sound reduction, but it is generally the most aesthetically pleasing. Often a combination of these methods proves to be the best solution. For example, along Bay Boulevard a berm/wall combination could shield noise originating from train operations. At the Temescal Creek park area, a wall with extensive plantings would be appropriate to shield the park from freeway noise.

APPENDIX H: HAZARDOUS MATERIALS

Regulatory Authority

Many State, Federal, and regional agencies regulate hazardous materials under several legislative acts. Sometimes the jurisdictions of these agencies overlap or conflict; occasionally this results in problems "falling through the cracks" when responsibility has not been clearly identified. A few of these agencies and some of the statutes related to hazardous materials are described below.

Resource Conservation and Recovery Act (RCRA). RCRA (42 USC 6901-9001) regulates generators, transporters, and facilities which treat, store, or dispose of hazardous wastes. States may operate more stringent programs in place of RCRA. RCRA contains provisions to encourage recycling of hazardous wastes rather than disposal, where possible.

Toxic Substances Control Act (TOSCA). This act (15 USC 2601-2629) directs the Environmental Protection Agency (EPA) to review new chemical substances and mixtures, to develop rules for industry testing, and to control existing toxic chemicals.

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). CERCLA, or Superfund, as it is commonly known (42 USC 9601-9657) finances remedial actions undertaken by the EPA to clean up inactive or abandoned sites. It also enables federal and state governments to seek reimbursement or to order clean-up from responsible parties.

Clean Water Act. This act (33 USC 1251-1376) delegates authority to the EPA over all waters of the United States. Permits are required for discharges of specified pollutants into any water body. The act specifies water quality standards for surface waters and effluent.

Hazardous Materials Transportation Act (HMTA). HMTA (49 USC 1801-1812) regulates the vehicular transportation of hazardous wastes and requires a manifest system to track the wastes from the generator to the disposal site.

California Hazardous Waste and Substance Control Laws. California's hazardous waste laws are covered under several statutes in the Health and Safety Code (Sections 25100-25395). Many of these laws implement or are more stringent than similar federal laws. The California Department of Health Services (DOHS) has been given the primary authority to regulate the storage, transport, and disposal of specified types and amounts of hazardous wastes.

In the case of contamination of soil or land by improperly handled hazardous materials, the DOHS has the authority to designate a property as a "Hazardous Waste Property" and lands within 2,000 feet of the contaminated site as a "Border Zone Property" (Health and Safety Code Section 25117.3). State regulations require that applicants for subdivision maps, parcel maps, and building permits on land within 2,000 feet of a listed potential Hazardous Waste Property, or any other significant hazardous waste disposal site, must apply to the DOHS for a determination of whether their land also should be designated a Hazardous Waste Property or Border Zone Property. These restrictions apply to a planned residence, hospital, school, day care center, or "any permanently occupied human habitation other than those used

for industrial purposes."¹ Land use restrictions may be imposed by the DOHS on a Hazardous Waste Property or a Border Zone Property. Restrictions are based on the potential for the property to threaten the present or future public health and safety. Mitigation is considered prior to imposing land use restrictions.² The landowner of a designated Hazardous Waste Property must create an easement permitting State officials from the DOHS to enter their lands in order to monitor the wastes.

On-site storage of hazardous materials also is regulated by the State through a permit process. An industry which uses hazardous materials must obtain a use permit from the DOHS prior to operation. In addition, the industry or hazardous substance user may be required to obtain a conditional use permit from the city and/or county government. Permits for off-site storage of hazardous materials are not required unless the materials in question are "extremely hazardous" as defined by the California Administrative Code.

The Porter-Cologne Water Quality Act (Sections 13000-13006 of the Water Code) created the State Water Resources Control Board and the Regional Water Quality Control Boards (RWQCBs). The Bay Area RWQCB is charged with implementing the federal Clean Water Act. The power to protect groundwater quality is vested in the RWQCB under a separate statute. The DOHS has authority to compel action in the cleanup of contaminated groundwater.

Existing Hazardous Waste Sites

Contamination at the Westinghouse site on Hollis Street is due to polychlorinated biphenyls (PCBs) from previous activities, which included work on electrical transformers. There is evidence of soil and groundwater contamination. Cleanup measures, including a slurry wall to partially contain the contamination, and installation of monitoring wells, have begun on the site. A cap is required to prevent contamination from spreading from the exposed soils with stormwater runoff. The contamination is extensive, and never will be fully contained.³ Future activities must not involve contact with the soil. The EPA has taken administrative responsibility for the Westinghouse site, and groundwater protection measures are being monitored by the RWQCB. Contamination from Westinghouse may have migrated to ITT Grinnell, or this site may be contaminated of its own sources. PCBs are known to contaminate the soil,⁴ but the extent of the contamination is not known. No investigation, cleanup, or monitoring currently is taking place on the ITT Grinnell property.⁵

¹Richard P. Wilcoxon, Chief, Toxic Substances Control Division, California Department of Health Services, letter to City and County Planning and Building Departments, March 30, 1984, re: Potential Hazardous Waste Properties in California.

2Ibid.

³Ron Clauson, Regional Water Quality Control Board, October 25, 1985; July 9, 1985.

⁴David Keith Todd, David Keith Todd Consulting Engineers, Inc., memorandum to John Anderson, Emeryville Redevelopment Agency, August 10, 1981, re: Potential for Pollution from PCB in Emeryville in Relation to Planned Housing Projects.

⁵Paul Williams, Waste Management Specialist III, California Department of Health Services Toxic Substances Control Division, August 6, 1985; August 8, 1985.

Monitoring wells were installed at a Chevron facility adjacent to Westinghouse. PCBs were not found, but vinyl chloride levels were high.¹ Cleanup has not been initiated on this site.

Groundwater at the Electro-Coatings site is contaminated with volatile organics and heavy metals. The metals are a result of a leaking drywell on the site, where chromium plating waste was disposed. The source of the organics has not been positively determined; it could have resulted from Electro-Coatings activities or from a previous use of the site. At this point, the extent of the contamination is not known, and mitigation measures have not yet been proposed.²

Soils in the Emeryville Marketplace have been found to contain contamination exceeding acceptable levels for heavy metals. This site contains several underground tanks from a previous paint products operation. The contaminants have been determined to represent no threat to groundwater supplies, as they are sealed off from the surface by an asphalt parking lot (and from rainwater which potentially could percolate into the soils and reach the groundwater).³ The DOHS still exercises some authority over the site, however, and has placed restrictions over its future use. Generally, any use which could allow contact with existing soils would require removal and replacement of soils and/or completely sealing the soil from human contact. Single-family dwellings or other residential units would not normally be allowed because of the risk of ingestion of hazardous substances through the soil or through edible plants grown in the soil. Commercial uses are less restricted. Since it was not possible to take soil samples over the entire site, future construction activities must be coordinated with the DOHS.⁴

Soil samples taken from random locations on the Delta-Garrett trucking terminal site indicated that threshold values for lead and zinc were exceeded. Hydrocarbons also may be present. Former site uses may have included a paint products operation, which could have contributed to the subsurface metals. Truck fueling overflows and/or potential leakage from underground fuel tanks and lines also may have caused some of the contamination.⁵

¹Ron Clauson, Regional Water Quality Control Board, July 9, 1985; October 25, 1985.

²Bob Marek, Regional Water Quality Control Board, July 9, 1985; October 29, 1985.

³Woodward-Clyde Consultants, Assessment of Subsurface Contaminants: Marketplace Property, Emeryville, California, May 1982.

⁴Paul Williams, Waste Management Specialist III, California Department of Health Services Toxic Substances Control Division, August 6, 1985, August 8, 1985.

⁵Earth Metrics Incorporated, Draft Environmental Impact Report for the Proposed Bay Center Development in the Redevelopment Project Area of the City of Emeryville, July 1985, p. 3.5-1.

Contamination may exist on other formerly industrial sites. Records of previous activities usually are not available. Paint products manufacturing, trucking operations, metal plating, and transformer work are examples of industrial activities that may have used or disposed of hazardous materials on-site. The PG&E site on Hollis Street could contain PCBs, although there is no evidence of contamination in the PG&E pipeline.

¹ Joe Close, Administrative Assistant, City of Emeryville, memorandum to the Mayor and City Council, City of Emeryville, November 6, 1981, re: Absence of PCBs in PG&E Pipeline in Emeryville (referencing a report provided to the City).

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